



# ***STIC Search Report***

## ***Biotech-Chem Library***

### **STIC Database Tracking**

TO: Everett White  
Location: cm1 8B19  
Art Unit: 1623  
Thursday, May 29, 2003

Case Serial Number: 831419

From: Alex Waclawiw  
Location: Biotech-Chem Library  
CM1-6A02  
Phone: 308-4491

[Alexandra.waclawiw@uspto.gov](mailto:Alexandra.waclawiw@uspto.gov)

### **Search Notes**



# STIC SEARCH RESULTS FEEDBACK FORM

## Biotech-Chem Library

Questions about the scope or the results of the search? Contact *the searcher or contact:*

Mary Hale, Information Branch Supervisor  
308-4258, CM1-1E01

## Voluntary Results Feedback Form

➤ I am an examiner in Workgroup:  Example: 1610

➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature  
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Drop off or send completed forms to STIC/Biotech-Chem Library CM1 – Circ. Desk



White 09/831,419

=> d his

(FILE 'REGISTRY' ENTERED AT 11:25:46 ON 29 MAY 2003)

DEL HIS Y  
ACT WHITE/A

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L1 STR  
L2 11999 SEA FILE=REGISTRY SSS FUL L1  
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E CHITOSAN/CN  
L3 1 S E3  
L4 750 S 9012-76-4/CRN  
L5 1 S L4 AND L2  
L6 1 S LACTOSE/CN  
E MALTOSE/CN  
L7 2 S E3  
E MELIBIOSE/CN  
L8 2 S E3  
E CELLOBIOSE/CN  
L9 1 S E3  
E LAMINARIBIOSE/CN  
L10 1 S E3  
E MANNOBIOSE/CN  
L11 1 S E3  
L12 8 S L6-L11  
L13 0 S L12 AND L4  
E GLUCOSAMINOGLYCAN/CN  
E GLYCOSAMINOGLYCANS/CN  
E GLYCOSAMINOGLYCAN/CN

FILE 'HCAPLUS' ENTERED AT 11:28:47 ON 29 MAY 2003

FILE 'REGISTRY' ENTERED AT 11:29:10 ON 29 MAY 2003

FILE 'REGISTRY' ENTERED AT 11:30:28 ON 29 MAY 2003

E CHITIN/CN  
L14 1 S E3  
L15 279 S 1398-61-4/CRN  
L16 0 S L15 AND L2  
L17 0 S L15 AND L12

FILE 'HCAPLUS' ENTERED AT 11:31:25 ON 29 MAY 2003

L18 1 S L5  
L19 15863 S L3 OR L14  
L20 19529 S L19 OR CHITIN# OR CHITOSAN#  
L21 2707 S L20 (L) (DERIV? OR DEACETYLT?)  
L22 8127 S PHOTOREACT? OR PHOTO REACT?  
L23 1 S L21(L) L22  
L24 1 S L21 AND L22  
L25 244478 S CAEEGHYDEA? OR DISACCHARIDE# OR SACCHARIDE# OR MONOSACCHARIDE#

L26 1 S L25 GLYCOSAMINOGLYCAN#  
L27 0 S L26 AND L21  
L28 0 S L27 OR L21

White 09/831,419

L34

25 S L23 OR L24 OR L28 OR L30 OR L33

=> fil reg

FILE 'REGISTRY' ENTERED AT 11:37:46 ON 29 MAY 2003

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PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 28 MAY 2003 HIGHEST RN 521913-14-4

DICTIONARY FILE UPDATES: 28 MAY 2003 HIGHEST RN 521913-14-4

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 5, 2003

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:

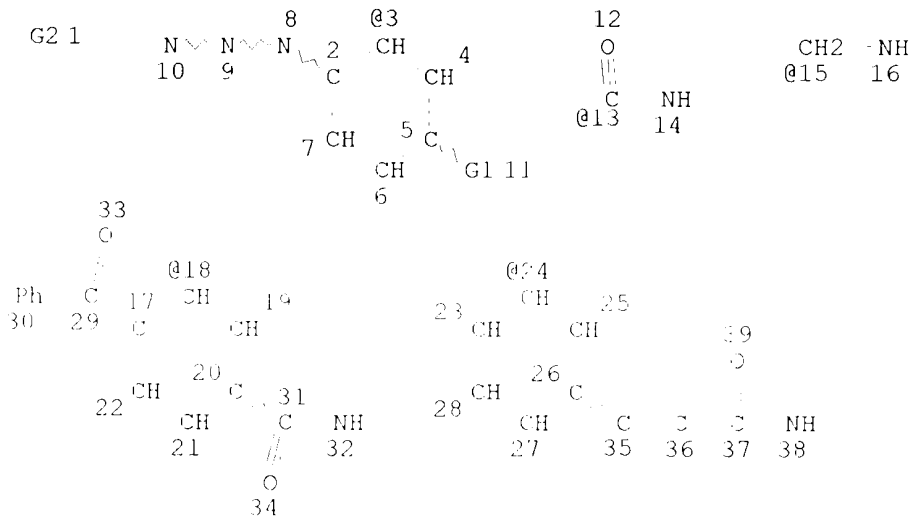
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> d:que stat 2

'2' IS NOT VALID HERE

=> d que stat 12

L1 STR



GRAPH ATTRIBUTES:

PRINT 1

White 09/831,419

NUMBER OF NODES IS 39

STEREO ATTRIBUTES: NONE

L2 11999 SEA FILE=REGISTRY SSS FUL L1

100.0% PROCESSED 173174 ITERATIONS

11999 ANSWERS

SEARCH TIME: 00.00.03

=> d que 13; d 13;d his 14

L3 1 SEA FILE=REGISTRY ABB=ON PLU=ON CHITOSAN/CN

L3 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS

RN 9012-76-4 REGISTRY

CN **Chitosan (8CI, 9CI)** (CA INDEX NAME)

OTHER NAMES:

CN 100D-VL

CN BC 10

CN BC 10 (polysaccharide)

CN Biopolymer L 112

CN Chicol

CN Chitan, N-acetyl-

CN Chitin, N-deacetyl-

CN Chitofos

CN Chitopearl 3510

CN Chitopearl BC 3000

CN Chitopearl BCW 2500

CN Chitopearl BCW 3000

CN Chitopearl BCW 3500

CN Chitopearl BCW 3505

CN Chitopearl BCW 3507

CN Chitopearl K 20

CN Chitosan 500

CN Chitosan CLH

CN Chitosan EL

CN Chitosan F

CN Chitosan FL

CN Chitosan H

CN Chitosan LL

CN Chitosan LL 80

CN Chitosan LLWP

CN Chitosan M

CN Chitosan MP

CN Chitosan PSH

CN Chitosan SK 10

CN Chitosan VL

CN Chitosan VL

CN Chitosan

CN Chitosan 100

CN Chitosan 100

CN Daichitosan VL  
CN Daichitosan W 10  
CN Deacetylchitin  
CN FCM 117  
CN Flonac C  
CN Flonac H  
CN Flonac LV  
CN Flonac N  
CN HC 1  
CN HC 1 (polysaccharide)  
CN Hiset KW 5  
CN Hydagan DCMF

ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for  
DISPLAY

DR 57285-05-9

MF Unspecified

CI PMS, COM, MAN

PCT Manual registration, Polyother, Polyother only

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS,  
BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,  
CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DIOGENES, DRUGU, EMBASE, IFICDB,  
IFIPAT, IFIUDB, IPA, MEDLINE, NAPRALERT, PHAR, PIRA, PROMT, RTECS\*,  
TOXCENTER, TULSA, USAN, USPAT2, USPATFULL, VTB

(\*File contains numerically searchable property data)

Other Sources: NDSL\*\*, TSCA\*\*, WHO

(\*\*Enter CHEMLIST File for up-to-date regulatory information)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

11371 REFERENCES IN FILE CA (1957 TO DATE)

2096 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

11422 REFERENCES IN FILE CAPLUS (1957 TO DATE)

(FILE 'REGISTRY' ENTERED AT 11:25:46 ON 29 MAY 2003)

L4 750 S 9012-76-4/CRN

*all structures with chitosan as  
a component.*

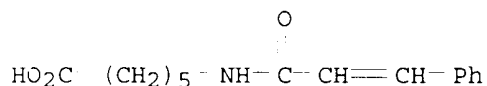
L5 1 S L4 AND L2

=> d 15

L5 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS  
 RN 185824-26-4 REGISTRY  
 CN Chitosan, compd. with 6-[(1-oxo-3-phenyl-2-propenyl)amino]hexanoic acid  
 (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Hexanoic acid, 6-[(1-oxo-3-phenyl-2-propenyl)amino]-, compd. with chitosan  
 (9CI)  
 OTHER NAMES:  
 CN Chitosan compd. with cinnamoyl-6-aminohexanoic acid  
 MF C15 H19 N O3 . x Unspecified  
 SR CA  
 LC STN Files: CA, CAPLUS, TOXCENTER

CM 1

CRN 78121-41-2  
 CMF C15 H19 N O3



CM 2

CRN 9012-76-4  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
 1 REFERENCES IN FILE CA (1957 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

=> d que 112

L6	1	SEA FILE=REGISTRY	ABB=ON	PLU=ON	LACTOSE/CN
L7	2	SEA FILE=REGISTRY	ABB=ON	PLU=ON	MALTOSE/CN
L8	2	SEA FILE=REGISTRY	ABB=ON	PLU=ON	MELIBIOSE/CN
L9	1	SEA FILE=REGISTRY	ABB=ON	PLU=ON	CELLOBIOSE/CN
L10	1	SEA FILE=REGISTRY	ABB=ON	PLU=ON	LAMINARIBIOSE/CN
L11	1	SEA FILE=REGISTRY	ABB=ON	PLU=ON	MANNOBIOSE/CN
L12	8	SEA FILE=REGISTRY	ABB=ON	PLU=ON	(L6 OR L7 OR L8 OR L9 OR L10 OR L11)

=> d 112 rn cn 1-8

Laminaribiose (8CI)  
 OTHER NAMES:  
 CN 3 O .beta. D Glucopyranosyl D glucose

CN Laminariose

L12 ANSWER 2 OF 8 REGISTRY COPYRIGHT 2003 ACS

FN 15984-36-4 REGISTRY

CN D-Glucopyranose, 4-O-.alpha.-D-glucopyranosyl- (8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:

CN **Maltose**

L12 ANSWER 3 OF 8 REGISTRY COPYRIGHT 2003 ACS

FN 14417-51-7 REGISTRY

CN D-Mannose, 4-O-.beta.-D-mannopyranosyl- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN **Mannobiose (6CI, 7CI)**

CN Mannose, 4-O-.beta.-D-mannopyranosyl-, D- (8CI)

OTHER NAMES:

CN .beta.-1,4-Mannobiose

CN 4-O-.beta.-D-Mannopyranosyl-D-mannose

L12 ANSWER 4 OF 8 REGISTRY COPYRIGHT 2003 ACS

FN 5340-95-4 REGISTRY

CN D-Glucopyranose, 6-O-.alpha.-D-galactopyranosyl- (9CI) (CA INDEX NAME)

OTHER NAMES:

CN **Melibiose**

L12 ANSWER 5 OF 8 REGISTRY COPYRIGHT 2003 ACS

FN 585-99-9 REGISTRY

CN D-Glucose, 6-O-.alpha.-D-galactopyranosyl- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN **Melibiose (8CI)**

OTHER NAMES:

CN D-Melibiose

L12 ANSWER 6 OF 8 REGISTRY COPYRIGHT 2003 ACS

FN 528-50-7 REGISTRY

CN D-Glucose, 4-O-.beta.-D-glucopyranosyl- (6CI, 9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN **Cellobiose (8CI)**

OTHER NAMES:

CN 4-(.beta.-D-Glucosido)-D-glucose

CN 4-Beta-D-Glucopyranosyl-D-glucopyranose

CN 4-O-.beta.-D-Glucopyranosyl-D-glucose

CN Cellose

CN D-(+)-Cellobiose

CN D-Cellobiose

CN D-Glucosyl-.beta.-(1.fwdarw.4)-D-glucose

L12 ANSWER 7 OF 8 REGISTRY COPYRIGHT 2003 ACS

FN 69-79-4 REGISTRY

CN D-Glucose, 4-O-.alpha.-D-glucopyranosyl- (6CI, 9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN D-Glucose, 4-O-.alpha.-D-glucopyranosyl-

CN D-Glucose, 4-O-.alpha.-D-glucopyranosyl-

CN D-Glucose, 4-O-.alpha.-D-glucopyranosyl-

CN D-Glucose, 4-O-.alpha.-D-glucopyranosyl-

CN Malt sugar  
 CN Maltobiose  
 CN Maltodiose  
 CN **maltose**  
 CN Sunmalt  
 CN Sunmalt S

L12 ANSWER 8 OF 8 REGISTRY COPYRIGHT 2003 ACS  
 RN 63-42-3 REGISTRY  
 CN D-Glucose, 4-O-.beta.-D-galactopyranosyl- (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN **Lactose (8CI)**  
 OTHER NAMES:  
 CN (+)-Lactose  
 CN AHL  
 CN Aletobiose  
 CN D-(+)-Lactose  
 CN Fast-flo  
 CN Fast-Flo Lactose  
 CN Galactinum  
 CN Lactin  
 CN Lactin (carbohydrate)  
 CN Lactobiose  
 CN Lactose anhydride  
 CN Lactose anhydrous  
 CN Lactose Fast-flo  
 CN Milk sugar  
 CN Nonpareil 107  
 CN Osmolactan  
 CN Pharmatose 21  
 CN Pharmatose 325M  
 CN Pharmatose 450M  
 CN Saccharum lactin  
 CN Tablettose  
 CN Tablettose 70  
 CN Zeparox EP

=> d his 113

(FILE 'REGISTRY' ENTERED AT 11:25:46 ON 29 MAY 2003)

L13 0 S L12 AND L4

=> d que 114;d 114;d his 115-117

L14 1 SEA FILE=REGISTRY ABB=ON PLU=ON CHITIN/CN

L14 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS

.. ..  
 .. ..  
 .. ..  
 .. ..

DR 9043-70-3, 191802-95-6  
 MF Unspecified  
 CI COM, MAN  
 LC STN Files: AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA,  
 CANCERLIT, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMLIST, CIN, CSCHEM,  
 CSNB, DDFU, DRUGU, EMBASE, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK\*,  
 NAPRALERT, PROMT, RTECS\*, TOXCENTER, USPAT2, USPATFULL, VETU, VTB  
 (\*File contains numerically searchable property data)  
 Other Sources: EINECS\*\*, NDSL\*\*, TSCA\*\*  
 (\*\*Enter CHEMLIST File for up-to-date regulatory information)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
 6612 REFERENCES IN FILE CA (1957 TO DATE)  
 843 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 6628 REFERENCES IN FILE CAPLUS (1957 TO DATE)

(FILE 'REGISTRY' ENTERED AT 11:30:28 ON 29 MAY 2003)

L15 279 S 1398-61-4/CRN  
 L16 0 S L15 AND L2  
 L17 0 S L15 AND L12

=> fil hcaplus  
 FILE 'HCAPLUS' ENTERED AT 11:39:16 ON 29 MAY 2003  
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FILE COVERS 1907 - 29 May 2003 VOL 138 ISS 22  
 FILE LAST UPDATED: 28 May 2003 (20030528/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

'OBI' IS DEFAULT SEARCH FIELD FOR 'HCAPLUS' FILE

=> d his 118

FILE COVERS 1907 - 29 May 2003 VOL 138 ISS 22  
 FILE LAST UPDATED: 28 May 2003 (20030528/ED)

L24 1 S L21 AND L22  
 L25 244478 S CARBOHYDRA? OR DISACCHARIDE# OR SACCHARIDE# OR MONOSACCHARIDE  
 L26 55 S L25 (L) L21  
 L27 39371 S L12 OR LACTOSE OR MALTOSE OR MELIBIOSE OR CELLOBIOSE OR LAMIN  
 L28 18 S L27 AND L26  
 L29 1272 S AMPHIPATH?  
 L30 2 S L29 (L) L21  
 L31 9056 S GLYCOSAMINOGLYCAN#  
 L32 26 S L31 AND L21  
 L33 7 S L31 (L) L21  
 L34 25 S L23 OR L24 OR L28 OR L30 OR L33

FILE 'REGISTRY' ENTERED AT 11:37:46 ON 29 MAY 2003

FILE 'HCAPLUS' ENTERED AT 11:39:16 ON 29 MAY 2003

=> d que nos 118

L1 STR  
 L2 11499 SEA FILE=REGISTRY SSS FUL L1  
 L4 750 SEA FILE=REGISTRY ABB=ON PLU=ON 9012-76-4/CRN  
 L5 1 SEA FILE=REGISTRY ABB=ON PLU=ON L4 AND L2  
 L18 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L5

=> d .ca hitstr 118

L18 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2003 ACS  
 ACCESSION NUMBER: 1997:88639 HCAPLUS  
 DOCUMENT NUMBER: 126:105680  
 TITLE: Ionization radiation-crosslinkable glucosamine-type polysaccharides and their manufacture  
 INVENTOR(S): Waki, Michinori; Oyamada, Hidekazu; Yamamoto, Kazutaka  
 PATENT ASSIGNEE(S): Seikagaku Kogyo Co Ltd, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 0530,903	A2	19961119	JP 1995-128795	19950501
PRIORITY APPLN. INFO.:			JP 1995-128795	19950501

AB The title physiol. compatible polysaccharides useful for medical applications, e.g., drug delivery devices, are manufd. by introducing radiation-crosslinkable nontoxic groups into the substrates optionally via spacers. Thus, mixing a sodium salt of hyaluronic acid (I) with cinnamic anhydride in a H2O-dioxane mixt. in the presence of 4-dimethylaminopyridine and Et3N for 2 h at room temp. and working up gave a

II Industrial application  
 Section 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 1339, 1340, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350, 1351, 1352, 1353, 1354, 1355, 1356, 1357, 1358, 1359, 1360, 1361, 1362, 1363, 1364, 1365, 1366, 1367, 1368, 1369, 1370, 1371, 1372, 1373, 1374, 1375, 1376, 1377, 1378, 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1399, 1400, 1401, 1402, 1403, 1404, 1405, 1406, 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1417, 1418, 1419, 1420, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428, 1429, 1430, 1431, 1432, 1433, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443, 1444, 1445, 1446, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1464, 1465, 1466, 1467, 1468, 1469, 1470, 1471, 1472, 1473, 1474, 1475, 1476, 1477, 1478, 1479, 1480, 1481, 1482, 1483, 1484, 1485, 1486, 1487, 1488, 1489, 1490, 1491, 1492, 1493, 1494, 1495, 1496, 1497, 1498, 1499, 1500, 1501, 1502, 1503, 1504, 1505, 1506, 1507, 1508, 1509, 1510, 1511, 1512, 1513, 1514, 1515, 1516, 1517, 1518, 1519, 1520, 1521, 1522, 1523, 1524, 1525, 1526, 1527, 1528, 1529, 1530, 1531, 1532, 1533, 1534, 1535, 1536, 1537, 1538, 1539, 1540, 1541, 1542, 1543, 1544, 1545, 1546, 1547, 1548, 1549, 1550, 1551, 1552, 1553, 1554, 1555, 1556, 1557, 1558, 1559, 1560, 1561, 1562, 1563, 1564, 1565, 1566, 1567, 1568, 1569, 1570, 1571, 1572, 1573, 1574, 1575, 1576, 1577, 1578, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1586, 1587, 1588, 1589, 1590, 1591, 1592, 1593, 1594, 1595, 1596, 1597, 1598, 1599, 1600, 1601, 1602, 1603, 1604, 1605, 1606, 1607, 1608, 1609, 1610, 1611, 1612, 1613, 1614, 1615, 1616, 1617, 1618, 1619, 1620, 1621, 1622, 1623, 1624, 1625, 1626, 1627, 1628, 1629, 1630, 1631, 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1798, 1799, 1800, 1801, 1802, 1803, 1804, 1805, 1806, 1807, 1808, 1809, 1810, 1811, 1812, 1813, 1814, 1815, 1816, 1817, 1818, 1819, 1820, 1821, 1822, 1823, 1824, 1825, 1826, 1827, 1828, 1829, 1830, 1831, 1832, 1833, 1834, 1835, 1836, 1837, 1838, 1839, 1840, 1841, 1842, 1843, 1844, 1845, 1846, 1847, 1848, 1849, 1850, 1851, 1852, 1853, 1854, 1855, 1856, 1857, 1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 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2794, 2795, 2796, 2797, 2798, 2799, 2800, 2801, 2802, 2803, 2804, 2805, 2806, 2807, 2808, 2809, 2810, 2811, 2812, 2813, 2814, 2815, 2816, 2817, 2818, 2819, 2820, 2821, 2822, 2823, 2824, 2825, 2826, 2827, 2828, 2829, 2830, 2831, 2832, 2833, 2834, 2835, 2836, 2837, 2838, 2839, 2840, 2841, 2842, 2843, 2844, 2845, 2846, 2847, 2848, 2849, 2850, 2851, 2852, 2853, 2854, 2855, 2856, 2857, 2858, 2859, 2860, 2861, 2862, 2863, 2864, 2865, 2866, 2867, 2868, 2869, 2870, 2871, 2872, 2873, 2874, 2875, 2876, 2877, 2878, 2879, 2880, 2881, 2882, 2883, 2884, 2885, 2886, 2887, 2888, 2889, 2890, 2891, 2892, 2893, 2894, 2895, 2896, 2897, 2898, 2899, 2900, 2901, 2902, 2903, 2904, 2905, 2906, 2907, 2908, 2909, 2910, 2911, 2912, 2913, 2914, 2915, 2916, 2917, 2918, 2919, 2920, 2921, 2922, 2923, 2924, 2925, 2926, 2927, 2928, 2929, 2930, 2931, 2932, 2933, 2934, 2935, 2936, 2937, 2938, 2939, 2940, 2941, 2942, 2943, 2944, 2945, 2946, 2947, 2948, 2949, 2950, 2951, 2952, 2953, 2954, 2955, 2956, 2957, 2958, 2959, 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3126, 3127, 3128, 3129, 3130, 3131, 3132, 3133, 3134, 3135, 3136, 3137, 3138, 3139, 3140, 3141, 3142,

acid compd. with methyl 6-aminohexanoyl-4-aminocinnamate hydrochloride  
 185824-25-3P, Hyaluronic acid compd. with 6-aminohexyl cinnamate  
 hydrochloride **185824-26-4P**, Chitosan compd. with  
 cinnamoyl-6-aminohexanoic acid

RL: IMF (Industrial manufacture); THU (Therapeutic use); BIOL (Biological  
 study); PREP (Preparation); USES (Uses)  
 (ionization-type radiation-crosslinkable mucopolysaccharides and manuf.  
 and medical uses)

IT **185824-26-4P**, Chitosan compd. with cinnamoyl-6-aminohexanoic acid  
 RL: IMF (Industrial manufacture); THU (Therapeutic use); BIOL (Biological  
 study); PREP (Preparation); USES (Uses)  
 (ionization-type radiation-crosslinkable mucopolysaccharides and manuf.  
 and medical uses)

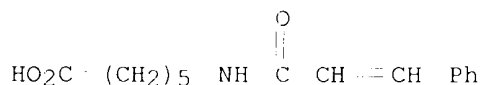
RN 185824-26-4 HCAPLUS

CN Chitosan, compd. with 6-[(1-oxo-3-phenyl-2-propenyl)amino]hexanoic acid  
 (9CI) (CA INDEX NAME)

CM 1

CRN 78121-41-2

CMF C15 H19 N O3



CM 2

CPN 9012-76-4

CMF Unspecified

CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

=> d que nos 134

L3	1	SEA	FILE=PEGISTFY	ABB=CN	PLU=CN	CHITOSAN/CN
L6	1	SEA	FILE=PEGISTFY	ABB=CN	PLU=CN	LACTOSE/CN
L7	2	SEA	FILE=PEGISTFY	ABB=CN	PLU=CN	MALTOSE/CN
L8	2	SEA	FILE=PEGISTFY	ABB=CN	PLU=CN	MELIBIOSE/CN
L9	1	SEA	FILE=PEGISTFY	ABB=CN	PLU=CN	CELLOBIOSE/CN
L10	1	SEA	FILE=PEGISTFY	ABB=CN	PLU=CN	LAMINARIBIOSE/CN
L11	1	SEA	FILE=PEGISTFY	ABB=CN	PLU=CN	MANNIOBIOS/CN
L12	8	SEA	FILE=PEGISTFY	ABB=CN	PLU=CN	(L6 OR L7 OR L8 OR L9 OR L10 OR L11)
L14	1	SEA	FILE=PEGISTFY	ABB=CN	PLU=CN	CHITIN/CN
L19	15863	SEA	FILE=HCAPLUS	ABB=CN	PLU=CN	L3 OR L14

SEA FILE=HCAPLUS ABB=CN PLU=CN  
 REACT?/CBI

L19 1 SEA FILE=HCAPLUS ABB=CN PLU=CN  
 REACT?/CBI

L25 244478 SEA FILE=HCAPLUS ABB=ON PLU=ON CARBOHYDRA?/OBI OR DISACCHARID  
 E#/OBI OR SACCHARIDE#/OBI OR MONOSACCHARIDE#/OBI OR SUGAR#/OBI  
 L26 55 SEA FILE=HCAPLUS ABB=ON PLU=ON L25 (L) L21  
 L27 39371 SEA FILE=HCAPLUS ABB=ON PLU=ON L12 OR LACTOSE/OBI OR  
 MALTOSSE/OBI OR MELIBIOSE/OBI OR CELLOBIOSE/OBI OR LAMINARIBIOSE  
 /OBI OR MANNOBIOSE/OBI  
 L28 18 SEA FILE=HCAPLUS ABB=ON PLU=ON L27 AND L26  
 L29 1272 SEA FILE=HCAPLUS ABB=ON PLU=ON AMPHIPATH?/OBI  
 L30 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L29 (L) L21  
 L31 9056 SEA FILE=HCAPLUS ABB=ON PLU=ON GLYCOSAMINOGLYCAN#/OBI  
 L33 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L31 (L) L21  
 L34 25 SEA FILE=HCAPLUS ABB=ON PLU=ON L23 OR L24 OR L28 OR L30 OR  
 L33

=> d .ca 134 1-25

L34 ANSWER 1 OF 25 HCAPLUS COPYRIGHT 2003 ACS  
 ACCESSION NUMBER: 2002:594682 HCAPLUS  
 DOCUMENT NUMBER: 137:135060  
 TITLE: Use of carbohydrates for eliminating intestinal  
 infections in animals  
 INVENTOR(S): Klingeberg, Michael; Kozianowski, Gunhild; Kunz,  
 Markwart; Munir, Mohammad; Vogel, Manfred  
 PATENT ASSIGNEE(S): Sudzucker Aktiengesellschaft Mannheim/Ochsenfurt,  
 Germany  
 SOURCE: PCT Int. Appl., 53 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002060452	A2	20020808	WO 2001-EP14867	20011217
WO 2002060452	A3	20030320		

W: AU, CA, IL, JP, MX, RU, US, ZA

EW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GE, GR, IE, IT, LU, MC, NL,  
 PT, SE, TR

DE 10104055 A1 20020814 DE 2001-10104055 20010131

PRIORITY APPLN. INFO.: DE 2001-10104055 A 20010131

AB The invention discloses the use of carbohydrates, esp.  
 1-O-.alpha.-D-glucopyranosyl-D-sorbitol, 6-O-.alpha.-D-  
 glucopyranosylsorbitol, lactobionic acid, maltobionic acid, condensed  
 palatinose, difructose dianhydrides, fructooligosaccharides, hydrated  
 fructooligosaccharides, chitooligosaccharides, chitosanooligosaccharides,  
 galactomannan oligosaccharides and oligogalacturonide-contg. pectin  
 hydrolyzates, for the treatment of bacterial intestinal infections in  
 monogastric animals. The invention also discloses animal feed and

69-79-4, Maltose

EL: BNF Biological study, unclassified ; RCT Reagents ; FICL Biological  
 study ; LACT Lactobionic acid ;

(reaction; carbohydrates for eliminating intestinal infections in animals)

IT 63-42-3, Lactose 1398-61-4, Chitin 9000-69-5, Pectin

9005-80-5, Inulin 9012-76-4D, Chitosan,

deacetylated 13718-94-0, Isomaltulose

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction; carbohydrates for eliminating intestinal infections in animals)

L34 ANSWER 2 OF 25 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:511191 HCAPLUS

DOCUMENT NUMBER: 138:152436

TITLE: Preparation, water solubility and rheological property of the N-alkylated mono or **disaccharide**

**chitosan derivatives**

AUTHOR(S): Yang, Tsui-Chu; Chou, Cheng-Chun; Li, Chin-Fung

CORPORATE SOURCE: Graduate Institute of Food Science & Technology, National Taiwan University 59, Taipei, Taiwan

SOURCE: Food Research International (2002), 35(8), 707-713

CODEN: FORIEU; ISSN: 0963-9969

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB N-alkylation of chitosan was performed in a mixt. of methanol and 1% acetic acid contg. different amts. of monosaccharides or disaccharides including glucose, galactose, glucosamine, fructose, lactose, maltose and cellobiose. All the N-alkylated chitosan derivs. with monosaccharides were insol. in aq. soln. (pH 7), while N-alkylated chitosan derivs. with disaccharides were easily sol. in distd. water, and the N-alkylated chitosan derivs. with lactose were sol. only at high pH. The degree of substitution (DS) of the N-alkylated chitosan derivs. increased with increasing disaccharides levels and with increasing reaction time. The reduced viscosity of the N-alkylated chitosan derivs. with disaccharides decreased with increasing DS. Apparent viscosity and pseudoplasticity of the N-alkylated disaccharide contg. deriv. solns. generally decreased with increasing DS. Although apparent viscosities of N-alkylated chitosan derivs. with low DS decreased with increase in pH or ionic strength, changes in high DS N-alkylated chitosan derivs. with pH values or ionic strength were not marked.

CC 17-2 (Food and Feed Chemistry)

Section cross-reference(s): 35

IT Food solubility

Food viscosity

(prepn., water soly. and rheol. property of N-alkylated mono or **disaccharide chitosan derivs.**)

IT **Disaccharides**

**Monosaccharides**

RL: ECT (Reactant); FACT (Reactant or reagent)

(prepn., water soly. and rheol. property of N-alkylated mono or **disaccharide chitosan derivs.**)

9012-76-4D, Chitosan

(prepn., water soly. and rheol. property of N-alkylated mono or **disaccharide chitosan derivs.**)

9012-76-4DP, Chitosan, 13718-94-0, Isomaltulose

PL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(prepn., water soly. and rheol. property of N-alkylated mono or  
**disaccharide chitosan derivs.**)

IT 50-99-7, D-Glucose, reactions 57-48-7, D-Fructose, reactions 59-23-4,  
D-Galactose, reactions **63-42-3, Lactose**  
**69-79-4, Maltose 528-50-7, Cellobiose**  
3416-24-8, Glucosamine

RL: RCT (Reactant); RACT (Reactant or reagent)  
(prepn., water soly. and rheol. property of N-alkylated mono or  
**disaccharide chitosan derivs.**)

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 3 OF 25 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:483099 HCAPLUS

DOCUMENT NUMBER: 135:242421

TITLE: Chemical modification of chitosan. 7. Preparation and  
lectin binding property of chitosan-carbohydrate  
conjugates

AUTHOR(S): Sashiwa, Hitoshi; Shigemasa, Yoshihiro; Roy, Rene

CORPORATE SOURCE: Department of Chemistry, University of Ottawa, Ottawa,  
ON, K1N 6N5, Can.

SOURCE: Bulletin of the Chemical Society of Japan (2001),  
74(5), 937-943

CODEN: BCSJA8; ISSN: 0009-2673

PUBLISHER: Chemical Society of Japan

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Chitosan-sialic acid conjugates were prepd. using p-formylphenyl  
.alpha.-sialoside by reductive N-alkylation. The degree of substitution  
(DS) of conjugates could be controlled from 0.06 to 0.53 by the amt. of  
sialoside. With the use of p-isothiocyanatophenyl .alpha.-sialoside,  
chitosan-sialic acid conjugates were also prepd. with excellent  
efficiency. Chitosan-melibiose conjugates having .alpha.-galactosyl  
epitope were also prepd. by reductive N-alkylation. These conjugates were  
transformed into water-sol. forms by N-succinylation and their protein  
binding property was tested using wheat germ agglutinin (WGA) or Griffonia  
simplicifolia (GSI-B4) lectin. Strong immunodiffusion bands were obsd. in  
all of conjugates, thus demonstrating the specific binding of epitope in  
conjugate to each lectins.

CC 33-5 (Carbohydrates)

Section cross-reference(s): 6:

IT **9012-76-4DP, Chitosan, formylphenyl melibioside**

**derivs. 9012-76-4DP, Chitosan,**

**melibiose derivs. 56240-42-4DP, Chitan, formylphenyl**

**melibioside derivs. 56240-42-4DP, Chitan, melibiose**

**derivs.**

RL: BAC (Biological activity or effector, except adverse); BSU (Biological  
study, unclassified); SPN (Synthetic preparation); BICL (Biological  
study); PREP (Preparation)

Chemical modification of chitosan. 7. Preparation and  
lectin binding property of chitosan-carbohydrate conjugates and their  
lectin binding specificity.

IT **585-99-9DP, Melibiose, chitosan derivs**

**. 9012-76-4DP, Chitosan, saccharide****derivs.** 288104-97-2DP, **chitosan derivs.**289635-27-4DP, **chitosan derivs.** 361177-01-7DP,  
**chitosan derivs.**RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)(prepn. of **chitosan-carbohydrate** conjugates and  
study of their lectin-binding specificity)IT **9012-76-4DP, Chitosan, saccharide****derivs.**, succinylated

RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn. of **chitosan-carbohydrate** conjugates and  
study of their lectin-binding specificity)REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 4 OF 25 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:340552 HCAPLUS

DOCUMENT NUMBER: 134:316099

TITLE: Nutritive composite bio-chemical health-care products

INVENTOR(S): Chen, Jiayan; Cai, Zhijian; Chen, Xin

PATENT ASSIGNEE(S): Peop. Rep. China

SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 4 pp.

CODEN: CNXXEV

DOCUMENT TYPE: Patent

LANGUAGE: Chinese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1271581	A	20001101	CN 1999-105992	19990427

PRIORITY APPLN. INFO.: CN 1999-105992 19990427

AB The nutrient is composed of chitosan 50-70, chitin 5-7, RNA 15-28, DNA 1-3, vitamin 5-10, amino acid 4-10, and orgs. of trace elements 0-5 part. Vitamin is vitamin A, vitamin B, vitamin C, vitamin D, and/or vitamin E.

IC ICM A61K031-715

CC 63-6 (Pharmaceuticals)

Section cross-reference(s): 18

IT Amino acids, biological studies

DNA

**Glycosaminoglycans**, biological studies

ENA

Trace elements, biological studies

Vitamins

EL: FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(nutrients contg. **chitin derivs.** and vitamins and amino acids and trace elements)

PATENT ASSIGNEE(S):

F. Hoffmann-Laurig AG, Germany

SOURCE:

Ber. Offen., 14 pp.

CODEN: CNXXEV

DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19857546	A1	20000615	DE 1998-19857546	19981214

PRIORITY APPLN. INFO.: DE 1998-19857546 19981214

AB The water soly. of chitin and/or chitosan at neutral or basic pH is increased by reacting them with aldoses and/or ketoses and reducing the intermediate imines to the corresponding amino compds. These derivs. have excellent gel- and film-forming and viscosity-elevating properties and show moisturizing and antimicrobial activity. They show improved compatibility with anionic formulation components and electrolytes, and dissolve to form clear solns. at neutral and alk. pH. Thus, a soln. of lactose 12.5 and maltose-H<sub>2</sub>O 13.5 g in 200 mL H<sub>2</sub>O was added dropwise to a soln. of 6 g chitosan in 330 mL 0.2M HOAc (pH 5) and the mixt. was stirred at room temp. for 6 h, followed by addn. of 7.1 g NaBH<sub>3</sub>CN and stirring for a further 24 h. The clear, highly viscous soln. was neutralized with concd. NaOH soln., and the product was pptd. with 800 mL acetone, washed, and dried. A hair rinse was prepd. contg. this N-substituted chitosan 1.0, Plantacare 818 2.0, Emulgade PL 68/50 4.0, Lameform TGI 1.0, Cutina GMS 0.5, Cetiol V 1.0, Nutrilan Keratin W 2.3, Gluadin WK 1.0, and H<sub>2</sub>O to 100 wt. %.

IC ICM A61K007-40  
 ICS C08B037-08

CC 62-3 (Essential Oils and Cosmetics)

ST **chitosan sugar deriv** reduced cosmetic; hair  
 prepn **chitosan lactose maltose;**  
**chitin sugar deriv** reduced cosmetic

IT 50-99-7D, D-Glucose, reaction products with chitin and chitosan, reduced, biological studies 59-23-4D, D-Galactose, reaction products with chitin and chitosan, reduced, biological studies **63-42-3D, Lactose**, reaction products with chitin and chitosan, reduced **69-79-4D, Maltose**, reaction products with chitin and chitosan, reduced **528-50-7D, Cellobiose**, reaction products with chitin and chitosan, reduced **585-99-9D, Melibiose**, reaction products with chitin and chitosan, reduced 1393-61-4D, Chitin, reaction products with aldoses and ketoses, reduced 1453-23-4D, D-Mannose, reaction products with chitin and chitosan, reduced 7512-17-6D, N-Acetylglucosamine, reaction products with chitin and chitosan, reduced 9012-76 4D, Chitosan, reaction products with aldoses and ketoses, reduced

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(N-substituted biopolymers for use in cosmetics)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

INVENTOR:

Chitosan derivatives  
 (a) Sugita, Shiro; (b) Sugita, Shiro; (c) Sugita, Shiro; (d) Sugita, Shiro; (e) Sugita, Shiro; (f) Sugita, Shiro; (g) Sugita, Shiro; (h) Sugita, Shiro; (i) Sugita, Shiro; (j) Sugita, Shiro; (k) Sugita, Shiro; (l) Sugita, Shiro; (m) Sugita, Shiro; (n) Sugita, Shiro; (o) Sugita, Shiro; (p) Sugita, Shiro; (q) Sugita, Shiro; (r) Sugita, Shiro; (s) Sugita, Shiro; (t) Sugita, Shiro; (u) Sugita, Shiro; (v) Sugita, Shiro; (w) Sugita, Shiro; (x) Sugita, Shiro; (y) Sugita, Shiro; (z) Sugita, Shiro; (aa) Sugita, Shiro; (ab) Sugita, Shiro; (ac) Sugita, Shiro; (ad) Sugita, Shiro; (ae) Sugita, Shiro; (af) Sugita, Shiro; (ag) Sugita, Shiro; (ah) Sugita, Shiro; (ai) Sugita, Shiro; (aj) Sugita, Shiro; (ak) Sugita, Shiro; (al) Sugita, Shiro; (am) Sugita, Shiro; (an) Sugita, Shiro; (ao) Sugita, Shiro; (ap) Sugita, Shiro; (aq) Sugita, Shiro; (ar) Sugita, Shiro; (as) Sugita, Shiro; (at) Sugita, Shiro; (au) Sugita, Shiro; (av) Sugita, Shiro; (aw) Sugita, Shiro; (ax) Sugita, Shiro; (ay) Sugita, Shiro; (az) Sugita, Shiro; 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PATENT ATTORNEY:

Setech, Inc., Japan

CODEN: PIXXD2

DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000027889	A1	20000518	WO 1999-JP6197	19991108
W: AU, CA, JP, US				
FW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 1152013	A1	20011107	EP 1999-954422	19991108
F: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
AU 755683	B2	20021219	AU 2000-10785	19991108
PRIORITY APPLN. INFO.:			JP 1998-319209	A 19981110
			WO 1999-JP6197	W 19991108

AB A functional chitosan deriv. which comprises a chitin/chitosan, which is a natural polysaccharide, and incorporated therein at least one of a saccharide, a photoreactive functional group, an amphipathic group, e.g., a polyoxyalkylene alkyl ether, and a glycosaminoglycan. The functional chitosan deriv. has soly. in a neutral medium, self-crosslink-ability, the property of highly contg. water or healing wounds, and antithrombogenic properties. Namely, the deriv. has various properties required of health care materials such as medical products and cosmetics. A lactose- and azidobenzoate-substituted chitosan was prepd. for obtaining a chitosan deriv. having reducing end groups and photoreactive functional groups. The chitosan deriv. was then crosslinked by UV irradiation for 30 s to obtain a hardly water-sol. chitosan hydrogel.

IC ICM C08B037-08

CC 63-7 (Pharmaceuticals)

Section cross-reference(s): 44, 62

ST **chitosan deriv saccharide** azidobenzoate  
**glycosaminoglycan** hydrogel

IT Anticoagulants

Cell adhesion

Cosmetics

Hydrogels

Medical goods

**chitosan derivs. contg. saccharides**

and/or **photoreactive** functional groups and/or

**amphipathic** groups and/or **glycosaminoglycan** for health care products)

IT Hair preparations

(conditioners; **chitosan derivs. contg.**

**saccharides** and/or **photoreactive** functional groups

and/or **amphipathic** groups and/or **glycosaminoglycan** for health care products)

10 92020 59 3pp, relation with **chitosan** 920400 59 3pp, relation with

**chitosan derivs. contg. saccharides**

and/or **photoreactive** functional groups and/or

**amphipathic** groups and/or **glycosaminoglycan** for

- IT 86630-59-3, EX 171  
 PL: PCT (Reactant); RACT (Reactant or reagent)  
 (chitosan derivs. contg. saccharides  
 and/or photoreactive functional groups and/or  
 amphipathic groups and/or glycosaminoglycan for  
 health care products)
- IT 269409-43-ODP, reaction product with azidobenzoic acid and Ex-171  
 269409-58-7P  
 PL: BAC (Biological activity or effector, except adverse); BSU (Biological  
 study, unclassified); BUU (Biological use, unclassified); RCT (Reactant);  
 SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological  
 study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (functional chitosan derivs. contg.  
 saccharides and/or photoreactive functional groups  
 and/or amphipathic groups and/or glycosaminoglycan  
 for health care products)
- IT 269409-44-1DP, reaction with azidobenzoic acid  
 PL: BAC (Biological activity or effector, except adverse); BSU (Biological  
 study, unclassified); BUU (Biological use, unclassified); SPN (Synthetic  
 preparation); THU (Therapeutic use); BIOL (Biological study); PREP  
 (Preparation); USES (Uses)  
 (functional chitosan derivs. contg.  
 saccharides and/or photoreactive functional groups  
 and/or amphipathic groups and/or glycosaminoglycan  
 for health care products)
- IT 269409-43-OP 269409-44-1P  
 PL: BUU (Biological use, unclassified); RCT (Reactant); SPN (Synthetic  
 preparation); THU (Therapeutic use); BIOL (Biological study); PREP  
 (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (functional chitosan derivs. contg.  
 saccharides and/or photoreactive functional groups  
 and/or amphipathic groups and/or glycosaminoglycan  
 for health care products)
- IT 269409-46-3P 269409-65-6P 269409-69-0P  
 PL: BUU (Biological use, unclassified); SPN (Synthetic preparation); THU  
 (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES  
 (Uses)  
 (functional chitosan derivs. contg.  
 saccharides and/or photoreactive functional groups  
 and/or amphipathic groups and/or glycosaminoglycan  
 for health care products)
- IT 63-42-3, Lactose 69-79-4, Maltose  
 585-99-9, Melibiose 611-95-0, p-Benzoylbenzoic acid  
 621-82-6, Cinnamic acid, reactions 6427-66-3, p-Azidobenzoic acid  
 9012-76-4, Chitosan  
 PL: PCT (Reactant); RACT (Reactant or reagent)  
 (prepn. of functional chitosan derivs. contg.  
 saccharides and/or photoreactive functional groups  
 and/or amphipathic groups and/or glycosaminoglycan  
 for health care products)

REFERENCE COUNT:

APPROVED BY:

DATE:

Synthesis of chitosan from lysine and evaluation of  
 its bioactivity

AUTHOR(S): Li, Xuebing; Morimoto, Minoru; Sashiwa, Hitoshi;  
Saimoto, Hiroyuki; Okamoto, Yoshiharu; Minami, Saburo;  
Shigemasa, Yoshihiro  
CORPORATE SOURCE: Department of Materials Science, Faculty of  
Engineering, Tottori University, Tottori, 680-8552,  
Japan  
SOURCE: Polymers for Advanced Technologies (1999), 10(7),  
455-458  
CODEN: PADTE5; ISSN: 1042-7147  
PUBLISHER: John Wiley & Sons Ltd.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Various chitosan-sugar hybrids were synthesized. The influence of the  
hybrids on the active oxygen generation of canine polymorphonuclear  
leukocyte (PMN) cells was investigated by measurement of the  
chemiluminescence (CL) response. The CL responses depended on the degree  
of substitution (DS) and water soly. of the hybrids. Water-insol. hybrids  
stimulated the PMN cells directly by phagocytosis and the water-sol. ones  
would sensitize the PMN cells by a priming effect.

CC 63-7 (Pharmaceuticals)

IT 5965-66-2DP, .beta.-D-Lactose, deriv., reaction  
products with **chitosan** 7296-15-3DP, .alpha.-D-Mannose,  
**deriv.**, reaction products with **chitosan**  
**9012-76-4DP, Chitosan**, reaction products with  
**sugar derivs.** 70086-22-5DP, Poly(oxy-1,2-ethanediyl),  
.alpha.-methyl-.omega.-2-oxoethoxy-, reaction products with chitosan  
RL: BAC (Biological activity or effector, except adverse); BSU (Biological  
study, unclassified); SPN (Synthetic preparation); BIOL (Biological  
study); PREP (Preparation)  
(prepn. of **chitosan-sugar** hybrids and their  
bioactivity)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 8 OF 25 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:305837 HCAPLUS  
DOCUMENT NUMBER: 131:60254  
TITLE: Chemical modification of chitin and chitosan 2:  
preparation and water soluble property of N-acylated  
or N-alkylated partially de-acetylated chitins  
AUTHOR(S): Sashiwa, Hitoshi; Shigemasa, Yoshihiro  
CORPORATE SOURCE: Department of Materials Science, Faculty of  
Engineering, Tottori University, Tottori, 680, Japan  
SOURCE: Carbohydrate Polymers (1999), 39(2), 127-138  
CODEN: CAPOD8; ISSN: 0144-8617  
PUBLISHER: Elsevier Science Ireland Ltd.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB N-Acylated partially de-acetylated chitin (I) derivs. were prepd. via  
ring opening reactions with various cyclic acid anhydrides to give

1. **chitosan deriv** and **chitosan deriv** reaction products  
hybrids; alkylation **chitosan deriv** reaction products  
**disaccharide monosaccharide**

reactions 56-82-6, DL-Glyceraldehyde 58-86-5, D-Xylose, reactions  
 59-23-4, D-Galactose, reactions **63-42-3, Lactose**  
**69-79-4, Maltose** 75-07-0, Acetaldehyde, reactions  
 78-84-2, Isobutyraldehyde 85-44-9, Phthalic anhydride 90-02-8,  
 Salicylaldehyde, reactions 100-52-7, Benzaldehyde, reactions 108-30-5,  
 Succinic anhydride, reactions 108-31-6, Maleic anhydride, reactions  
 108-55-4, Glutaric anhydride 119-67-5, 2-Formylbenzoic acid 120-21-8,  
 4-Diethylaminobenzaldehyde 123-11-5, 4-Methoxybenzaldehyde, reactions  
 123-38-6, Propionaldehyde, reactions 123-72-8, n-Butyraldehyde  
 129-64-6, 5-Norbornene-endo-2,3-dicarboxylic anhydride 141-46-8,  
 Glycolaldehyde 146-72-5, 3-O-Methyl-D-glucose 154-17-6,  
 2-Deoxy-D-glucose 298-12-4, Glyoxylic acid **528-50-7,**  
**Cellobiose** 533-67-5, 2-Deoxy-D-ribose 552-30-7, Trimellitic  
 anhydride **585-99-9, Melibiose** 619-66-9,  
 4-Formylbenzoic acid 872-85-5, 4-Formylpyridine 935-79-5,  
 cis-1,2,3,6-Tetrahydrophtalic anhydride 2170-03-8, Itaconic anhydride  
 2438-80-4, L-Fucose 3458-28-4, D-Mannose 3615-41-6, L-Rhamnose  
 7512-17-6, N-Acetyl-D-glucosamine 9012-76-4, Chitosan 10323-20-3,  
 D-Arabinose 13149-00-3, cis-1,2-Cyclohexanedicarboxylic anhydride  
 54373-51-9

RL: RCT (Reactant); RACT (Reactant or reagent)

(acylation of chitosan with cyclic anhydrides and alkylation with aldehydes and disaccharides and monosaccharides)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 9 OF 25 HCAILLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:142396 HCAPLUS

DOCUMENT NUMBER: 130:242143

TITLE: Amphoteric chitosan derivatives and cosmetics  
containing them

INVENTOR(S) : Seki, Taizo

PATENT ASSIGNEE(S): NOEVIR Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKZYAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11060606	A2	19990302	JP 1997-227406	19970807
PRIORITY APPLM. INFO.:			JP 1997-227406	19970807

OTHER SOURCE(S): MAFPAT 130:242143

AB    Cosmetics contain amphoteric chitosan derivs. having (lyso)phosphatidyl group-contg. reducing sugars  $R_1COCH_2CH(COOR_2)CH_2OP(O)(OH)OX$  ( $R_1, R_2 = H, C_4\text{ to }eq.1$  linear or branched alkyl, alkenyl;  $X =$  reducing sugar residue;  $R_1 = R_2$  (noteq. H) linked to the amine groups. Chitosan was reacted with D-arabinose lysophosphatidylcholine deriv. to give an amphoteric chitosan

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Carbohydrates, 100-110

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 84

(amino **sugars**; prepn. of amphoteric **chitosan deriv.** emulsifiers for storage-stable, antimicrobial, and moisturizing cosmetics)

IT **Carbohydrates**, reactions

PL: RCT (Reactant); RACT (Reactant or reagent)

(reducing **sugars**; prepn. of amphoteric **chitosan**

**deriv.** emulsifiers for storage-stable, antimicrobial, and moisturizing cosmetics)

IT 50-99-7DP, D-Glucose, reaction products with (lyso)phospholipids and chitosan, biological studies 57-48-7DP, D-Fructose, reaction products with (lyso)phospholipids and chitosan, biological studies 59-23-4DP, D-Galactose, reaction products with (lyso)phospholipids and chitosan, biological studies **63-42-3DP, Lactose**, reaction products with (lyso)phospholipids and chitosan **69-79-4DP, Maltose**, reaction products with (lyso)phospholipids and chitosan **528-50-7DP, Cellobiose**, reaction products with (lyso)phospholipids and chitosan 1109-28-0DP, Maltotriose, reaction products with (lyso)phospholipids and chitosan 1114-41-6DP, Muramic acid, reaction products with (lyso)phospholipids and chitosan 3019-74-7DP, D-Sedoheptulose, reaction products with (lyso)phospholipids and chitosan 3416-24-8DP, D-Glucosamine, reaction products with (lyso)phospholipids and chitosan **9012-76-4DP, Chitosan**, reaction products with (lyso)phosphatidyl group-contg. reducing **sugars** 10323-20-3DP, D-Arabinose, reaction products with (lyso)phospholipids and chitosan 13000-25-4DP, Lactosamine, reaction products with (lyso)phospholipids and chitosan  
 FL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BUU (Biological use, unclassified); MOA (Modifier or additive use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (prepn. of amphoteric **chitosan deriv.** emulsifiers for storage-stable, antimicrobial, and moisturizing cosmetics)

L34 ANSWER 10 OF 25 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:142395 HCAPLUS

DOCUMENT NUMBER: 130:242142

TITLE: Amphoteric chitosan derivatives and cosmetics containing them

INVENTOR(S): Seki, Taizo

PATENT ASSIGNEE(S): NOEVIR Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|------------|------|------|-----------------|------|

Abstract: A method for producing an amphoteric chitosan derivative. The method involves reacting a group of chitosan or partially deacetylated chitin. Chitosan was reacted with N-stearoyl-D-glucosamine and lactose to give an amphoteric chitosan derivative. The derivative was then reacted with a phospholipid to give an amphoteric chitosan derivative.

- antimicrobial and skin-moisturizing effects.
- IC ICM C08B037-08  
ICS A61K007-00; A61K007-035; A61K007-48; A61K031-73; A61K007-075;  
A61K007-08
- CC 62-3 (Essential Oils and Cosmetics)  
Section cross-reference(s): 1, 63
- IT **Carbohydrates**, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(amino **sugars**; prepn. of storage-stable, antimicrobial, and  
moisturizing amphoteric **chitosan derivs.** for  
cosmetics)
- IT Glycerophospholipids  
Lysophospholipids  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reducing **sugar derivs.**; prepn. of storage-stable,  
antimicrobial, and moisturizing amphoteric **chitosan  
derivs.** for cosmetics)
- IT **Carbohydrates**, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reducing **sugars**; prepn. of storage-stable, antimicrobial,  
and moisturizing amphoteric **chitosan derivs.** for  
cosmetics)
- IT **Carbohydrates**, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(**sugar** esters; prepn. of storage-stable, antimicrobial, and  
moisturizing amphoteric **chitosan derivs.** for  
cosmetics)
- IT 50-99-7DP, D-Glucose, phosphatidyl **derivs.**, reaction products  
with **chitosan** and reducing **sugars**, biological studies  
50-99-7DP, D-Glucose, reaction products with **chitosan** and  
hydrophobic group-contg. reducing **sugars**, biological studies  
69-79-4DP, Maltose, reaction products with  
**chitosan** and hydrophobic group-contg. reducing **sugars**  
528-50-7DP, Cellobiose, reaction products with  
**chitosan** and hydrophobic group-contg. reducing **sugars**  
1109-28-0DP, Maltotriose, reaction products with **chitosan** and  
hydrophobic group-contg. reducing **sugars** 3458-28-4DP,  
D-Mannose, lysophosphatidyl **derivs.**, reaction products with  
**chitosan** and reducing **sugars** 4618-18-2DP, Lactulose,  
reaction products with **chitosan** and hydrophobic group-contg.  
reducing **sugars** 5627-25-8DP, Azarobiose, reaction products  
with **chitosan** and hydrophobic group-contg. reducing  
**sugars** 9012-76-4DP, Chitosan, reaction  
products with hydrophobic and hydrophilic reducing **sugars**  
13000-25-4DP, Lactosamine, reaction products with **chitosan** and  
hydrophobic group-contg. reducing **sugars** 24299-14-7DP,  
N-Stearoyl-D-glucosamine, reaction products with **chitosan** and  
reducing **sugars** 34620-76-3DP, Maltopentaose, reaction products  
with **chitosan** and hydrophobic group-contg. reducing  
**sugars** 110297-44-4DP, reaction products with **chitosan**  
and reducing **sugars**
- chitosan  
sugars  
and reducing **sugars**  
**chitosan** and reducing **sugars**  
products with **chitosan** and reducing **sugars**

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses) (prepn. of storage-stable, antimicrobial, and moisturizing amphoteric **chitosan derivs.** for cosmetics)

L34 ANSWER 11 OF 25 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:771319 HCAPLUS

DOCUMENT NUMBER: 130:29226

TITLE: Use of sugar derivatives against adhesion of protozoa and parasites

INVENTOR(S): Wolf, Florian; Schreiber, Joerg; Maurer, Peter; Buenger, Joachim

PATENT ASSIGNEE(S): Beiersdorf A.-G., Germany

SOURCE: Ger. Offen., 20 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

|                        | PATENT NO.   | KIND | DATE     | APPLICATION NO.  | DATE     |
|------------------------|--|------|----------|------------------|----------|
|                        | DE 19721411  | A1   | 19981126 | DE 1997-19721411 | 19970522 |
| PRIORITY APPLN. INFO.: |  |      |          | DE 1997-19721411 | 19970522 |
| AB                     | Adhesion of pathogenic protozoa and parasites to the skin or organ surfaces is inhibited by topical, oral, or parenteral administration of compns. contg. antiadhesive carbohydrates or carbohydrate derivs. such as esters with fatty acids. Thus, a water-in-oil lotion contained paraffin oil 25.00, silicone oil 2.00, ceresin 1.50, lanolin alc. 0.50, glucose sesquiosostearate 2.50, cetearyl glucoside 1.00, perfume, preservative, and H2O to 100.00 wt.%.<br>IC ICM A61K007-48<br>ICS A61K007-50; A61K007-075; A61K007-08; A61K007-11; A61K007-15; A61K007-32  |      |          |                  |          |
| CC                     | 53-5 (Pharmaceuticals)   |      |          |                  |          |
| IT                     | 56-73-5, Glucose 6-phosphate 57-50-1, Sucrose, biological studies<br>59-23-4, D-Galactose, biological studies <b>69-79-4</b> ,<br><b>Maltose</b> 512-69-6, Raffinose 533-67-5, Deoxyribose<br><b>1398-61-4D, Chitin</b> , hydrolyzed 3438-80-4 3458-28-4,<br>D Mannose 3615-41-6, Rhamnose 3672-15-9, Mannose 6-phosphate<br>7512-17-6, N-Acetylglucosamine 7535-00-4, Galactosamine 9004-34-6,<br>Cellulose, biological studies 9004-61-9, Hyaluronic acid 9004-62-0,<br>Hydroxyethylcellulose 9005-25-8, Starch, biological studies 9005-32-7,<br>Alginic acid 9005-79-2, Glycogen, biological studies 9005-80-5, Inulin<br>9005-82-7, Amylose <b>9012-76-4, Chitosan</b> 9014-63-5,<br>Xylan 9037-22-3, Amylopectin 9037-55-2, Galactan 11138-66-2, Xanthan<br>19600-01-2, Ganglioside GM2 37266-93-6 54827-14-4, Ganglioside GM3<br>56846-77-8, Decyl glucoside 65988-71-8, Ganglioside GD2 66267-50-3,<br><b>Chitosan</b> lactate 71012-19-6, Asialoganglioside GM1 89361-21-7, |      |          |                  |          |

Use of sugar derivs. against adhesion of protozoa and parasites

L34 ANSWER 12 OF 25 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:650920 HCAPLUS

DOCUMENT NUMBER: 129:335511

TITLE: Nonirritant skin-moisturizing and antiaging preparations containing 2-hydroxy fatty acids and sugars

INVENTOR(S): Yamada, Yasuhiro; Takei, Masumi; Yamamura, Tatsuo

PATENT ASSIGNEE(S): NOEVIR Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND  | DATE     | APPLICATION NO. | DATE     |
|------------------------|---|----------|-----------------|----------|
| JP 10265337            | A2  | 19981006 | JP 1997-91574   | 19970325 |
| PRIORITY APPLN. INFO.: |   |          | JP 1997-91574   | 19970325 |
| AB                     | The title topical prepn. contain .gtoreq.1 2-hydroxy fatty acid and .gtoreq.1 selected from chitosan, its derivs., and mixts. of sugars isomerized with alkali hydroxide solns. The prepn. show long-lasting and synergistic skin-moisturizing and fibroblast-activating effects and are useful for antiwrinkle and antiaging cosmetics. Formulation examples are given.  |          |                 |          |
| IC                     | ICM A61K007-00<br>ICS A61K007-00; A61K007-035; A61K031-19; A61K031-70; A61K031-73; A61K007-48   |          |                 |          |
| CC                     | 62-4 (Essential Oils and Cosmetics)   |          |                 |          |
| IT                     | Cosmetics<br>(antiaging; nonirritant skin-moisturizing and antiaging prepn. contg. 2-hydroxy fatty acids and isomerized <b>sugars</b> and/or <b>chitosan (derivs.)</b> )  |          |                 |          |
| IT                     | Carboxylic acids, biological studies<br>Fatty acids, biological studies<br>RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)<br>(hydroxy; nonirritant skin-moisturizing and antiaging prepn. contg. 2-hydroxy fatty acids and isomerized <b>sugars</b> and/or <b>chitosan (derivs.)</b> ) |          |                 |          |
| IT                     | <b>Carbohydrates</b> , biological studies<br>RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)<br>(isomerized; nonirritant skin-moisturizing and antiaging prepn. contg. 2-hydroxy fatty acids and isomerized <b>sugars</b> and/or <b>chitosan (derivs.)</b> )                            |          |                 |          |
| IT                     | Cosmetics<br>(moisturizers; nonirritant skin-moisturizing and antiaging prepn. contg. .gtoreq.1 2-hydroxy fatty acids and .gtoreq.1 selected from <b>sugars</b> and <b>chitosan derivs.</b> )   |          |                 |          |
| IT                     | Lactic acid, biological studies 77-92-6, citric acid, 77-32-6, fumaric acid, 110-17-8, malic acid, 118-90-1, tartaric acid, 87-69-6, succinic acid, 110-15-6, and malonic acid, 141-82-3  |          |                 |          |

87-69-4, Tartaric acid, biological studies 600-15-7, 2-Hydroxybutyric acid 617-31-2, 2-Hydroxyvaleric acid 2889-31-8, 2-Hydroxyglutaric acid 6915-15-7, Malic acid **9012-76-4, Chitosan**

18294-85-4, 2-Hydroxyadipic acid 52349-26-5, N-Trimethylchitosan

80331-46-0, 2-Hydroxyazelaic acid 87043-79-5, 2-Hydroxypimelic acid

PL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(nonirritant skin-moisturizing and antiaging preps. contg. 2-hydroxy fatty acids and isomerized **sugars** and/or **chitosan** (**derivs.**))

IT 50-99-7, Glucose, biological studies **63-42-3, Lactose**

PL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); RCT (Reactant); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)

(nonirritant skin-moisturizing and antiaging preps. contg. 2-hydroxy fatty acids and isomerized **sugars** and/or **chitosan** (**derivs.**))

L34 ANSWER 13 OF 25 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:430637 HCAPLUS

DOCUMENT NUMBER: 129:153027

TITLE: **Amphipathic chitosan derivatives** and cosmetics or topical preparations containing them

INVENTOR(S): Seki, Tai-ko

PATENT ASSIGNEE(S): NOEVIR Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE     |
|------------------------|------|----------|-----------------|----------|
| JP 10182332            | A2   | 19980707 | JP 1996-354854  | 19961220 |
| PRIORITY APPLN. INFO.: |      |          | JP 1996-354854  | 19961220 |

OTHER SOURCE(S): MAFPAT 129:153027

AB Title preps. contain (RCOCHNH)nY, (RNXNH)nY, and/or (RCOXNH)nY [R = C2-22 alkyl, alkenyl; X = sugar residue; Y = (partially deacetylated) chitosan residue; n > 0 or 1]. The preps. show good moisturizing effect, antimicrobial property, and stability. A skin lotion was prepd. from EtOH 5.00, N-stearoyllactosamine-modified chitosan (substitution degree 0.59) 1.00, citric acid 0.05, and H<sub>2</sub>O 93.95 wt. %.

IC ICM A61K007-00

ICS A61K007-00; A61K031-7.5; B01F017-56; C08B037-03; A61K007-02; A61K007-06; A61K007-07

CC 62-4 (Essential Oils and Cosmetics)

Section cross references (a) 62

Amphipathic chitosan derivatives

IT 9012-76-4DP, Chitosan, reaction products with sugar

Chitosan

reaction products with **deacetylated chitosan**  
 210832-13-6DP, reaction products with **chitosan** 210832-14-7DP,  
 reaction products with **chitosan** 210832-15-8DP, reaction  
 products with **deacetylated chitosan** 210887-10-8DP,  
 reaction products with **chitosan** 210887-11-9DP, reaction  
 products with **chitosan** 210887-14-2DP, reaction products with  
**chitosan** 210887-15-3DP, reaction products with  
**deacetylated chitosan** 210887-16-4DP, reaction products  
 with **deacetylated chitosan**

RL: BAC (Biological activity or effector, except adverse); BSU (Biological  
 study, unclassified); BUU (Biological use, unclassified); PNU  
 (Preparation, unclassified); THU (Therapeutic use); BIOL (Biological  
 study); PREP (Preparation); USES (Uses)

(cosmetics or topical prepns. contg. **amphipathic  
 chitosan derivs.**)

L34 ANSWER 14 OF 25 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:402740 HCAPLUS

DOCUMENT NUMBER: 119:126879

TITLE: Melanin formation stimulants containing chitosan  
 derivatives and skin and hair cosmetics containing  
 them

INVENTOR(S): Banno, Norihiro; Toki, Masako; Matahira, Yoshiharu  
 PATENT ASSIGNEE(S): Ichimaru Pharcos Inc., Japan; Yaizu Suisan Kagaku  
 Kogyo K. K.

SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND   | DATE     | APPLICATION NO. | DATE     |
|------------------------|--|----------|-----------------|----------|
| JP 10167924            | A2   | 19980623 | JP 1996-338886  | 19961203 |
| PRIORITY APPLN. INFO.: |  |          | JP 1996-338886  | 19961203 |
| AB                     | Skin and hair cosmetics contain melanin formation stimulants contg.<br>reaction products of chitosan with reducing terminal-contg. sugars. The<br>cosmetics cause skin darkening without UV irradiation and prevent gray hair<br>formation. Chitosan (10 g) was treated with 5.0 g D-<br>galactopyranosylgluconic acid in TEMED buffer in the presence of<br>carbodiimide hydrochloride for 3 days to give approx. 12.5 g chitosan<br>deriv., which showed tyrosinase activation and melanin formation<br>stimulation. Milky lotion, lotion, pack, cream, shampoo, body soap, etc.<br>contg. the chitosan derivs. were formulated. |          |                 |          |
| IC                     | ICM A61K007-00<br>ICS A61K007-00; A61K007-06; A61K007-075; A61K007-08; A61K007-48;<br>A61K007-50; A61K031-73   |          |                 |          |
| CC                     | 62 1 (Essential Oils and Cosmetics)  |          |                 |          |
| ST                     | cosmetic melanin formation stimulant <b>chitosan; sugar</b>  |          |                 |          |

reducing **sugars**, reaction products with **chitosan**;  
 chitosan derivs.

. for skin and hair cosmetics)  
 IT 69-79-4DP, Maltose, reaction products with chitosan  
 9012-76-4DP, Chitosan, reaction products with reducing  
 sugars 209126-36-3DP, reaction products with chitosan  
 RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or  
 effector, except adverse); BSU (Biological study, unclassified); BUU  
 (Biological use, unclassified); SPN (Synthetic preparation); BIOL  
 (Biological study); PREP (Preparation); USES (Uses)  
 (melanin formation stimulants contg. **chitosan derivs**  
 . for skin and hair cosmetics)

L34 ANSWER 15 OF 25 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:394387 HCAPLUS  
 DOCUMENT NUMBER: 129:69064  
 TITLE: Antibacterial agents and preservatives containing  
 chitosan derivatives and their use  
 INVENTOR(S): Kawai, Tokuji; Naito, Takehito; Koh, Ken; Matahei,  
 Yoshiharu  
 PATENT ASSIGNEE(S): Ichimaru Pharcos Inc., Japan; Yaizu Suisan Kagaku  
 Kogyo K. K.  
 SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.  
 CODEN: JKEXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE     |
|------------------------|------|----------|-----------------|----------|
| JP 10158305            | A2   | 19980616 | JP 1996-338885  | 19961203 |
| PRIORITY APPLN. INFO.: |      |          | JP 1996-338885  | 19961203 |

AB The antibacterial agents and preservatives contain chitosan derivs. prepd.  
 by reacting chitosan and sugars with reductive terminals. Their uses in  
 medicines for external use, bathing medicines, foods, drinks, and fiber  
 treatment agents are also claimed. Thus, 5.0 g D-galactopyranosylgluconic  
 acid was dissolved in 50 mmol tetramethylenediamine (I) buffer, stirred in  
 the presence of carbodiimide hydrochloride, mixed with 10 g chitosan  
 (deacetylation degree 33%) dissolved in I buffer, stirred, dialyzed,  
 washed, and dried to give approx. 12.5 g a chitosan-lactose deriv. (lactose  
 derivation approx. 31.5%). Growth of E. coli, S. aureus, P. aeruginosa, B.  
 subtilis, and K. pneumoniae were prevented in a medium contg. the deriv.

IC ICM C08B037-08  
 PCS A01N043-16; A23L001-30; A61K007-00; A61K007-06; A61K007-075;  
 A61K007-08; A61K007-48; A61K007-50; D06M015-03

CC 44-5 (Industrial Carbohydrates)  
 Section cross-reference(s): 17, 40, 62, 63

ST **chitosan deriv** antibacterial agent preservative;  
**sugar** reductive terminal **chitosan deriv** prepn;  
 galactopyranosyl gluconic acid **chitosan deriv** prepn;  
 medicine external use antibacterial preservative **chitosan**;

deriv.  
 deriv

IT 69-79-4DP, Maltose, reaction products with chitosan  
 9012-76-4DP, Chitosan, reaction products with  
 sugars with reduced reactivity

with chitosan

RL: IMF (Industrial manufacture); PREP (Preparation)  
(antibacterial agents and preservatives contg. **chitosan**  
**derivs.** and their use)

L34 ANSWER 16 OF 25 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:289621 HCAPLUS

DOCUMENT NUMBER: 129:16341

TITLE: Preparation of aminosugar derivatives for medical and cosmetics uses

INVENTOR(S): Goto, Mitsuaki; Saeki, Shiro; Saito, Yoshio; Yura, Hirofumi

PATENT ASSIGNEE(S): Netech K. K., Japan; Yaizu Suisan Kagaku Kogyo K. K.

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE     |
|------------------------|------|----------|-----------------|----------|
| JP 10120705            | A2   | 19980512 | JP 1996-272604  | 19961015 |
| PRIORITY APPLN. INFO.: |      |          | JP 1996-272604  | 19961015 |

AB The aminosugars are prepd. by binding .gtoreq.1 amino group of aminosugar-contg. polysaccharides and/or oligosaccharides with a terminal group formed upon oxidative ring opening of reducing terminal of another sugars, preferably using water-sol. carbodiimides. The aminosugars are useful as moisturizers for cosmetics and those having sugars as constituents of extracellular matrix are useful as anchorages for cell culture, and moisturizers for cosmetics. Lactobionic acid was dissolved in a TEMED buffer, and the soln. was treated with EDC for 30 min then with a TEMED buffer soln. of chitosan for 3 days while adding EDC in several portions to give a chitosan lactose deriv.

IC ICM C08B037-08

ICS A51L027-00; C08B037-00

CC 33-5 (Carbohydrates)

ST aminopolysaccharide amidation cleaved **sugar**; lactobionic acid amidation **chitosan**; amino-oligosaccharide **sugar** deriv prepn cell anchorage; cosmetic moisturizer; aminopolysaccharide **sugar** deriv

IT 1398-61-4, Chitin

RL: RCT (Reactant); FACT (Reactant or reagent)

(**deacetylation** of; prepn. of aminosugar-contg. oligo- or polysaccharides having another **sugar** moiety via amino group and their biol. uses)

IT 59-23-4D, Galactose, oxidatively cleaved, oligo- or polysaccharides having aminosugars amidated with 56-82-2D, reaction products with aminosugars of oligo- or polysaccharides 528-50-7D, Cellobiose, oxidatively cleaved, oligo- or polysaccharides having aminosugars amidated

34480-39-7D, Laminaribiose,

59-23-4D, Galactose, oxidatively cleaved, oligo- or polysaccharides having aminosugars amidated with 56-82-2D, reaction products with aminosugars of oligo- or polysaccharides 528-50-7D, Cellobiose, oxidatively cleaved, oligo- or polysaccharides having aminosugars amidated

with

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES  
(Uses)

(prepn. of aminosugar-contg. oligo- or polysaccharides having another  
sugar moiety via amino group and their biol. uses)

L34 ANSWER 17 OF 25 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1997:365396 HCAPLUS

DOCUMENT NUMBER: 127:92325

TITLE: Capillary electrophoresis of **glycosaminoglycan**  
-**derived** disaccharides: application to  
stability studies of **glycosaminoglycan**  
**chitosan** complexes

AUTHOR(S): Denuziere, Anne; Taverna, Myriam; Ferrier, Danielle;  
Domard, Alain

CORPORATE SOURCE: Laboratoire de Chimie Analytique, Faculte de  
pharmacie, Chatenay-Malabry, F-92290, Fr.

SOURCE: Electrophoresis (1997), 18(5), 745-750

CODEN: ELCTDN; ISSN: 0173-0835

PUBLISHER: Wiley-VCH

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Capillary zone electrophoresis (CZE) was used to sep. the disaccharides  
produced by chondroitinase digestion of chondroitin sulfates. The main  
disaccharides formed upon depolymn. have identical charge and mass.  
Base-line resoln. of these two compds. was achieved by achieved by  
selecting appropriate concn. and pH of a borate buffer. Validation of the  
method showed a good linearity of the response and a very satisfactory  
reproducibility of migration times with a relative std. deviation (RSD) of  
less than 0.4%. The reproducibility of peak areas was improved by using  
an internal standardization. The addn. of cinnamic acid (internal std.)  
to the incubation medium allowed us to perform kinetic measurements of the  
depolymn. while keeping a baseline resoln. of the two main disaccharides  
analyzed during the complete digestion course even when their concn. in  
the incubation medium increased. Application of this method to the  
comparison of the rate of hydrolysis of chondroitin sulfate and of a  
complex assocg. chondroitin sulfate with chitosan showed clearly that, at  
the physiol. pH, chitosan protected the chondroitin sulfate from depolymn.  
This phenomenon was more pronounced as the pH of the incubation medium was  
far from the optimum pH activity of the chondroitinase.

CC 9-7 (Biochemical Methods)

ST **glycosaminoglycan derived** disaccharide capillary  
electrophoresis; **chitosan** complex glycosaminoglycancapillary  
electrophoresis

IT Capillary electrophoresis  
(capillary electrophoresis of **glycosaminoglycan**-  
**derived** disaccharides and application to stability studies of  
**glycosaminoglycan chitosan** complexes)

IT Disaccharides

RI: PEP (Physical, engineering or chemical process); PPOC (Processes)

1. Anal. Capillary zone electrophoresis (CZE) was used to sep. the disaccharides  
produced by chondroitinase digestion of chondroitin sulfates. The main  
disaccharides formed upon depolymn. have identical charge and mass.  
Base-line resoln. of these two compds. was achieved by achieved by  
selecting appropriate concn. and pH of a borate buffer. Validation of the  
method showed a good linearity of the response and a very satisfactory  
reproducibility of migration times with a relative std. deviation (RSD) of  
less than 0.4%. The reproducibility of peak areas was improved by using  
an internal standardization. The addn. of cinnamic acid (internal std.)  
to the incubation medium allowed us to perform kinetic measurements of the  
depolymn. while keeping a baseline resoln. of the two main disaccharides  
analyzed during the complete digestion course even when their concn. in  
the incubation medium increased. Application of this method to the  
comparison of the rate of hydrolysis of chondroitin sulfate and of a  
complex assocg. chondroitin sulfate with chitosan showed clearly that, at  
the physiol. pH, chitosan protected the chondroitin sulfate from depolymn.  
This phenomenon was more pronounced as the pH of the incubation medium was  
far from the optimum pH activity of the chondroitinase.

IT 9007-28-7, Chondroitin sulfate  
 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL  
 (Biological study); PROC (Process)  
 (capillary electrophoresis of **glycosaminoglycan-**  
**derived** disaccharides and application to stability studies of  
**glycosaminoglycan chitosan** complexes)

L34 ANSWER 18 OF 25 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1995:462235 HCAPLUS

DOCUMENT NUMBER: 125:117922

TITLE: Cinnamic acid derivatives for photocrosslinkable  
cinnamic acid-glycosaminoglycan derivative

INVENTOR(S): Waki, Michinori; Miyamoto, Kenji; Motani, Yoshihiro

PATENT ASSIGNEE(S): Seikaqaku Kogyo Kabushiki Kaisha, Japan

SOURCE: Eur. Pat. Appl., 47 pp.

CODEN: EPKADW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|---|------|----------|-----------------|----------|
| EP 713859   | A2   | 19960529 | EP 1995-118164  | 19951117 |
| EP 713859   | A3   | 19960526 |                 |          |
| EP 713859   | B1   | 20000830 |                 |          |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE |      |          |                 |          |
| JP 08143604   | A2   | 19960604 | JP 1994-307050  | 19941117 |
| JP 3308742  | B2   | 20020729 |                 |          |
| JP 09087236   | A2   | 19970331 | JP 1995-264686  | 19950920 |
| JP 3343181  | B2   | 20021111 |                 |          |
| CA 2162957  | AA   | 19960518 | CA 1995-2162957 | 19951115 |
| RU 2169136  | C2   | 20010620 | RU 1995-120243  | 19951116 |
| AU 9537931  | A1   | 19960523 | AU 1995-37931   | 19951117 |
| AU 705316   | B2   | 19990520 |                 |          |
| HU 73745  | A2   | 19960930 | HU 1995-3304    | 19951117 |
| HU 219542   | B    | 20010528 |                 |          |
| CN 1133834  | A    | 19961023 | CN 1995-121853  | 19951117 |
| CN 1090637  | B    | 20010911 |                 |          |
| AT 195932   | E    | 20000915 | AT 1995-118164  | 19951117 |
| ES 2149914  | T3   | 20001116 | ES 1995-118164  | 19951117 |
| CN 1245812  | A    | 20000301 | CN 1999-111865  | 19990730 |
| CN 1098273  | B    | 20030108 |                 |          |

PRIORITY APPLN. INFO.: JP 1994-307050 A 19941117  
JP 1995-264686 A 19950920

OTHER SOURCE(S): MARFAT 125:117922

AB A photosensitive modifier, cinnamic acid deriv. is prepd. by introducing a novel spacer, e.g. aminoalc., amino acid, peptide, polyethylene glycolamine, etc. into photodimerizable cinnamic acid. Biopolymers (cast films) with properties (water absorption, phys. properties, physiol.

10. The above compound (4) was dissolved in 100 ml. of  $\text{CH}_2\text{Cl}_2$  and the solution was cast on a glass plate and dried in a vacuum oven at  $50^\circ\text{C}$ . for 24 hr. and cast as a film. Deposition rate was 0.15  $\mu\text{m}/\text{min}$ . The above carboxylic acid polymer deriv. film was exposed to UV light to form photoimage. The photoresistability of the polymer film was 100 sec.

are bound to form a cyclobutane ring) crosslinked biopolymer film.

IC ICM C07C219-10  
ICS C07C017-08; C07C229-22; C07C237-08; C07C233-51; C07C237-04;  
C07K005-06; C07K005-08; C08B037-00; C08B037-08  
CC 44-5 (Industrial Carbohydrates)  
IT 9004-61-9DP, Hyaluronic acid, reaction product with cinnamic acid deriv.,  
photocrosslinked 9007-28-7DP, Chondroitin sulfate, reaction product with  
cinnamic acid deriv., photocrosslinked **9012-76-4DP**,  
**Chitosan**, reaction product with cinnamic acid **deriv.**,  
photocrosslinked  
RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
(cinnamic acid **derivs.** for photocrosslinkable cinnamic acid-  
**glycosaminoglycan deriv.** and properties)

L34 ANSWER 19 OF 25 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1996:313778 HCAPLUS  
DOCUMENT NUMBER: 125:41781  
TITLE: Glycosaminoglycan-synthetic polymer conjugates  
INVENTOR(S): Rhee, Woonza M.; Berg, Richard A.  
PATENT ASSIGNEE(S): Collagen Corp., USA  
SOURCE: U.S., 18 pp., Cont.-in-part of U.S. 5,324,775.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 18  
PATENT INFORMATION:

| PATENT NO. | KIND | DATE     | APPLICATION NO. | DATE     |
|------------|------|----------|-----------------|----------|
| US 5510418 | A    | 19960423 | US 1993-146843  | 19931103 |
| US 5162430 | A    | 19921110 | US 1989-433441  | 19891114 |
| US 5324775 | A    | 19940628 | US 1992-907518  | 19920702 |
| US 5304595 | A    | 19940419 | US 1992-998802  | 19921230 |
| US 5306500 | A    | 19940426 | US 1993-110577  | 19930823 |
| US 5376375 | A    | 19941227 | US 1994-177578  | 19940105 |
| US 5523348 | A    | 19960604 | US 1994-292415  | 19940818 |
| CA 2134745 | AA   | 19950504 | CA 1994-2134745 | 19941031 |
| EP 656215  | A1   | 19950607 | EP 1994-117227  | 19941101 |

R: AT, BE, CH, DE, DK, ES, FF, GB, IT, LI, NL, SE

|             |    |          |                |          |
|-------------|----|----------|----------------|----------|
| JP 07-78203 | A2 | 19931024 | JP 1994-271556 | 19941104 |
| US 5543441  | A  | 19960806 | US 1995-427576 | 19950426 |
| US 5470911  | A  | 19951128 | US 1995-433656 | 19950504 |
| US 5476666  | A  | 19951219 | US 1995-434725 | 19950504 |

PRIORITY APPLN. INFO.:

|                |    |          |
|----------------|----|----------|
| US 1988-074071 | B2 | 19881111 |
| US 1989-433441 | A2 | 19891114 |
| US 1992-907518 | A2 | 19920702 |
| US 1992-930142 | A3 | 19920814 |
| US 1993-110577 | A3 | 19930823 |
| US 1993-146843 | A  | 19931103 |
| US 1994-177578 | A3 | 19940105 |

are bound to form a cyclobutane ring) crosslinked biopolymer film. The biopolymer is selected from hyaluronic acid, chondroitin sulfate, dermatan sulfate, chitin and heparin, each of which is chemically derivatized to react with a hydrophilic synthetic polymer. The conjugate comprises a photocrosslinkable biopolymer

a hydrophilic synthetic polymer may be further bound to collagen to form a three component conjugate having different properties. The hydrophilic synthetic polymer may be polyethylene glycol and derivs. thereof having an av. mol. wt. over a range of from about 100 to about 100,000. The compns. may include other components such as fluid, pharmaceutically acceptable carriers to form injectable formulations, and/or biol. active proteins such as growth factors or cytokines. The conjugates of the invention generally contain large amts. of water when formed. The conjugates can be dehydrated to form a relatively solid implant for use in hard tissue augmentation. The dehydrated, solid implant can further be ground into particles which can be suspended in a non-aq. fluid and injected into a living being (preferably human) for soft tissue augmentation. Once in place, the solid implants or particles rehydrate and expand in size approx. three- to five-fold.

IC ICM C08G063-91

NCL 525054200

CC 63-6 (Pharmaceuticals)

IT **1398-61-4DP, Chitin**, reaction products with PEG

**derivs.** 9004-61-9DP, Hyaluronic acid, deacetylated, reaction products with PEG derivs. 9005-49-6DP, Heparin, reaction products with PEG derivs. **9012-76-4DP, Chitosan**, reaction products with PEG **derivs.** 9056-36-4DP, Keratan sulfate, reaction products with PEG derivs. 9067-32-7DP, Sodium hyaluronate, deacetylated, reaction products with PEG derivs. 24967-93-9DP, Chondroitin sulfate A, reaction products with PEG derivs. 24967-94-0DP, Dermatan sulfate, reaction products with PEG derivs. 25322-46-7DP, Chondroitin sulfate C, reaction products with PEG derivs. 25322-68-3DP, Polyethylene glycol, activated, reaction products with glycosaminoglycans 154467-38-6DP, reaction products with glycosaminoglycans

RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(**glycosaminoglycan**-synthetic polymer conjugates for pharmaceuticals)

L34 ANSWER 20 OF 25 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1995:795229 HCAPLUS

DOCUMENT NUMBER: 123:179528

TITLE: Glycosaminoglycan-synthetic polymer conjugates

INVENTOR(S): Rhee, Woonza M.; Berg, Richard A.

PATENT ASSIGNEE(S): Collagen Corp., USA

SOURCE: Can. Pat. Appl., 19 pp.

CODEN: CPMXEE

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 13

PATENT INFORMATION:

| PATENT NO. | KIND | DATE     | APPLICATION NO. | DATE     |
|------------|------|----------|-----------------|----------|
| CA 2134745 | AA   | 19950504 | CA 1994 2134745 | 19941031 |

AB Pharmaceutically acceptable, nonimmunogenic compns. are formed by covalently binding glycosaminoglycans or derivs. thereof, to hydrophilic

biocompatible conjugates. Useful glycosaminoglycans include hyaluronic acid, the chondroitin sulfates, keratan sulfate, chitin and heparin, each of which is chem. derivatized to react with a hydrophilic synthetic polymer. The conjugate comprising a glycosaminoglycan covalently bound to a hydrophilic synthetic polymer may be further bound to collagen to form a three component conjugate having different properties. The hydrophilic synthetic polymer may be polyethylene glycol and derivs. thereof having an av. mol. wt. over a range of from about 100 to about 100,000. The compns. may include other components such as fluid, pharmaceutically acceptable carriers to form injectable formulations, and/or biol. active proteins such as growth factors or cytokines. The conjugates of the invention generally contain large amts. of water when formed. The conjugates can be dehydrated to form a relatively solid implant for use in hard tissue augmentation. The dehydrated, solid implant can further be ground into particles which can be suspended in a non-aq. fluid and injected into a living being (preferably human) for soft tissue augmentation. Once in place, the solid implants or particles rehydrate and expand in size approx. three- to five-fold.

IC ICM C07K015-20  
ICS C07K017-08; C08B037-00; A61L027-00; A61K047-48; A61K037-66;  
A61K037-36; A61K031-715  
CC 63-6 (Pharmaceuticals)  
IT **1398-61-4DP, Chitin**, reaction products with PEG  
**derivs.** 9004-61-9DP, Hyaluronic acid, reaction products with PEG  
**derivs.** 9005-49-6DP, Heparin, reaction products with PEG  
**9012-76-4DP, Chitosan**, reaction products with PEG  
**derivs.** 9056-36-4DP, Keratan sulfate, reaction products with PEG  
**derivs.** 24967-93-9DP, Chondroitin sulfate A, reaction products with PEG  
**derivs.** 24967-94-0DP, Dermatan sulfate, reaction products with PEG  
**derivs.** 25322-46-7DP, Chondroitin sulfate C, reaction products with PEG  
**derivs.** 25322-68-3DP, derivs., reaction products with glycosaminoglycans  
26403-72-5P 62066-14-2DP, reaction products with glycosaminoglycans  
122375-06-8P 123502-57-8P 151709-76-1P 154467-38-6DP, reaction  
products with glycosaminoglycans  
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological  
study); PREP (Preparation); USES (Uses)  
(**glycosaminoglycan-synthetic polymer conjugates**)

L34 ANSWER 21 OF 15 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1995:490011 HCAPLUS

DOCUMENT NUMBER: 122:222866

TITLE: Ionically crosslinked glycosaminoglycan gels for soft  
tissue augmentation and drug delivery.

INVENTOR(S): Berg, Richard A.; Ehee, Woonza M.

PATENT ASSIGNEE(S): Collagen Corp., USA

SOURCE: Eur. Pat. Appl., 30 pp.

CODEN: EPXKDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

FILED IN: AT, BE, DE, DK, ES, FR, GB, GR, IT, JP, NL, SE

RE: AT, BE, DE, DK, ES, FR, GB, IT, JP, NL, SE

CLASSIFICATION: A61K 037/00, A61K 031/00, A61L 027/00, A61K 047/48, A61K 037/66, A61K 037/36, A61K 031/715

JP 07196704 A2 19950801 JP 1994-199881 19940824  
 PRIORITY APPLN. INFO.: US 1993-112833 19930826  
 AB The present invention pertains to the use of glycosaminoglycans, chem. derivatized glycosaminoglycans, and optionally, chem. derivatized collagens to form ionically crosslinked gels useful in mammal soft tissue augmentation and in drug delivery systems. The derivatized glycosaminoglycans can be used to form an ionically homogeneous gel comprising one or more species of glycosaminoglycan deriv. or can be used to form an ionically crosslinked heterogeneous gel comprising one or more neg. charged species of glycosaminoglycan or collagen deriv. in combination with one or more pos. charged species of glycosaminoglycan deriv. or collagen deriv. The ionically crosslinked homogeneous or ionically crosslinked heterogeneous gels are produced from liq. solns. which upon adjusting pH in situ form a gel.  
 IC ICM C08L005-08  
 ICS C08L005-10; A61K047-36; A61L027-00  
 ICI C08L005-10, C08L089-06  
 CC 63-6 (Pharmaceuticals)  
 Section cross-reference(s): 33  
 IT 9004-61-9DP, Hyaluronic acid, deacetylated 9005-49-6DP, Heparin, desulfated 9007-28-7DP, Chondroitin sulfate, deacetylated  
**9012-76-4DP, Chitosan, deacetylated**  
 9012-76-4P, Chitosan  
 RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (ionically crosslinked **glycosaminoglycan** gels for soft tissue augmentation and drug delivery)

L34 ANSWER 22 OF 25 HCAPLUS COPYRIGHT 2003 ACS  
 ACCESSION NUMBER: 1993:496519 HCAPLUS  
 DOCUMENT NUMBER: 119:96519  
 TITLE: Functionalized biodegradable poly(hydroxyalkanoates) and method of manufacturing same  
 INVENTOR(S): Yalpani, Manssur  
 PATENT ASSIGNEE(S): USA  
 SOURCE: U.S., 9 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE     |
|------------------------|------|----------|-----------------|----------|
| US 5191016             | A    | 19930302 | US 1990-554338  | 19900719 |
| US 5268422             | A    | 19931207 | US 1992-973730  | 19921109 |
| PRIORITY APPLN. INFO.: |      |          | US 1990-554338  | 19900719 |

AB The title polymers  $YQ[[CH(E1)(CH2)lCCO]m[CH(R2)(CH2)rCOO]n]qCHR3(CH2)pA(X-Z)$   
 (A = CO, CH2; E1 = H, Cl-9 alkyl or alkenyl, arom. moiety; X = O, NH; Y = H, saccharide or alkenyl moiety having mol. wt. 25-100,000; Z = H,

1. A polymer of the formula  $YQ[[CH(E1)(CH2)lCCO]m[CH(R2)(CH2)rCOO]n]qCHR3(CH2)pA(X-Z)$   
 2. A polymer of the formula  $YQ[[CH(E1)(CH2)lCCO]m[CH(R2)(CH2)rCOO]n]qCHR3(CH2)pA(X-Z)$   
 3. A polymer of the formula  $YQ[[CH(E1)(CH2)lCCO]m[CH(R2)(CH2)rCOO]n]qCHR3(CH2)pA(X-Z)$

CC 35-8 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 5, 38, 43, 44

ST    **chitosan** polyhydroxybutyric acid **deriv** biodegradable;  
polyhydroxybutyric acid cellulose **deriv** biodegradable;  
polysaccharide polyhydroxybutyric acid **deriv** biodegradable;  
oligosaccharide polyhydroxybutyric acid **deriv** biodegradable;  
**disaccharide** polyhydroxybutyric acid **deriv**  
biodegradable; **monosaccharide** polyhydroxybutyric acid  
**deriv** biodegradable; starch polyhydroxybutyric acid **deriv**  
biodegradable; dextran polyhydroxybutyric acid **deriv**  
biodegradable

IT 50-69-1DP, D-Ribose, reaction products with poly(hydroxybutyrate)  
50-70-4DP, D-Glucitol, amino derivs., reaction products with  
poly(hydroxybutyrate) 50-99-7DP, D-Glucose, reaction products with  
poly(hydroxybutyrate) 57-48-7DP, D-Fructose, reaction products with  
poly(hydroxybutyrate) 57-50-1DP, Sucrose, reaction products with  
poly(hydroxybutyrate) 57-92-1DP, Streptomycin, reaction products with  
poly(hydroxybutyrate) 58-86-6DP, D-Xylose, reaction products with  
poly(hydroxybutyrate) 59-23-4DP, D-Galactose, reaction products with  
poly(hydroxybutyrate) **63-42-3DP**, reaction products with  
poly(hydroxybutyrate) 69-65-8DP, Mannitol, reaction products with  
poly(hydroxybutyrate) **69-79-4DP, Maltose**, reaction  
products with poly(hydroxybutyrate) 147-81-9DP, Arabinose, reaction  
products with poly(hydroxybutyrate) 299-28-5DP, Glucal, reaction  
products with poly(hydroxybutyrate) 488-43-7DP, 1-Amino-1-deoxysorbitol,  
reaction products with poly(hydroxybutyrate) 488-81-3DP, Ribitol,  
reaction products with poly(hydroxybutyrate) 535-94-4DP, reaction  
products with poly(hydroxybutyrate) 585-86-4DP, Lactitol, reaction  
products with poly(hydroxybutyrate) 585-88-6DP, Maltitol, reaction  
products with poly(hydroxybutyrate) 608-66-2DP, Galactitol, reaction  
products with poly(hydroxybutyrate) 1811-31-0DP, N-Acetylgalactosamine,  
reaction products with poly(hydroxybutyrate) 1949-75-3DP,  
D-glycero-D-gluco-Heptose, reaction products with poly(hydroxybutyrate)  
2438-80-4DP, Fucose, reaction products with poly(hydroxybutyrate)  
3416-24-8DP, reaction products with poly(hydroxybutyrate) 3458-38-4DP,  
Mannose, reaction products with poly(hydroxybutyrate) 3615-17-6DP,  
reaction products with poly(hydroxybutyrate) 3615-41-6DP, Rhamnose,  
reaction products with poly(hydroxybutyrate) 7512-17-6DP, N-Acetyl  
glucosamine, reaction products with poly(hydroxybutyrate) 7535-10-4DP,  
reaction products with poly(hydroxybutyrate) 8063-07-8DP, Kanamycin,  
reaction products with poly(hydroxybutyrate) 9000-07-1DP, Carrageenan,  
reaction products with poly(hydroxybutyrate) 9000-69-5DP, Pectin,  
reaction products with poly(hydroxybutyrate) 9002-39-5DP, Poly(vinyl  
alcohol), reaction products with poly(hydroxybutyrate) 9002-98-6DP,  
reaction products with poly(hydroxybutyrate) 9003-20-7DP, Poly(vinyl  
acetate), reaction products with poly(hydroxybutyrate) 9004-34-6DP,  
Cellulose, reaction products with poly(hydroxybutyrate) 9004-35-7DP,  
Cellulose acetate, reaction products with poly(hydroxybutyrate)  
9004-54-0DP, Dextran, reaction products with poly(hydroxybutyrate)  
9004-58-0DP, Dextran sulfate, reaction products with poly(hydroxybutyrate)

6034 60 11, Xylan, reaction products with poly-hydroxybutyrate  
6034 60 60P, Hemicellulose, reaction products with poly-hydroxybutyrate  
6036 88 8BP, Mannan, reaction products with poly-hydroxybutyrate

9045-28-7DP, Starch acetate, reaction products with poly(hydroxybutyrate)  
 9050-36-6DP, Maltodextrin, reaction products with poly(hydroxybutyrate)  
 9057-02-7DP, Pullulan, reaction products with poly(hydroxybutyrate)  
 11078-30-1DP, Galactomannan, reaction products with poly(hydroxybutyrate)  
 11078-31-2DP, Glucomannan, reaction products with poly(hydroxybutyrate)  
 11138-66-2DP, Xanthan, reaction products with poly(hydroxybutyrate)  
 12619-70-4DP, Cyclodextrin, reaction products with poly(hydroxybutyrate)  
 14307-02-9DP, Mannosamine, reaction products with poly(hydroxybutyrate)  
 25336-38-9DP, Poly(vinyl amine), reaction products with  
 poly(hydroxybutyrate) 35110-26-0DP, Poly(glucosamine), reaction products  
 with poly(hydroxybutyrate) 37331-28-5DP, Pustulan, reaction products  
 with poly(hydroxybutyrate) 39464-87-4DP, Scleroglucan, reaction products  
 with poly(hydroxybutyrate) 42617-20-9P, Chitosan acetate 54724-00-4DP,  
 Curdlan, reaction products with poly(hydroxybutyrate) 96949-21-2DP,  
 Rhamsan gum, reaction products with poly(hydroxybutyrate) 96949-22-3DP,  
 Welan gum, reaction products with poly(hydroxybutyrate) 113755-30-9DP,  
 reaction products with poly(hydroxybutyrate) 142804-65-7DP, Gellan,  
 reaction products with poly(hydroxybutyrate) 149315-80-0DP, reaction  
 products with poly(hydroxybutyrate)  
 RL: PREP (Preparation)  
 (prepn. of, biodegradable)

L34 ANSWER 23 OF 25 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1993:87414 HCAPLUS  
 DOCUMENT NUMBER: 118:87414  
 TITLE: Manufacture of hair tonics  
 INVENTOR(S): Inoe, Tomio  
 PATENT ASSIGNEE(S): Japan Happy K. K., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE     |
|--|------|----------|-----------------|----------|
| JP 04295412  | A2   | 19921020 | JP 1991-84688   | 19910325 |
| PRIORITY APPLN. INFO.:   |      |          | JP 1991-84688   | 19910325 |
| AB A hair tonic is prepd. with an acidic soln. contg. (1) .gtoreq. 1 material selected from a group comprising sol. natural sugars, blood plasma, and/or plasma expanders, and (2) .gtoreq. 1 compd. selected from chitin, chitosan, and/or their derivs. A compn. contg. citric acid 15, chitin-chitosan mixt. 5, dextran 6, maltose 12, glucose 6, and H2O 56 wt.% showed an excellent hair growth-stimulating effect. |      |          |                 |          |
| IC ICM A61K007-06  |      |          |                 |          |
| CC 62-4 (Essential Oils and Cosmetics)   |      |          |                 |          |
| ST hair tonic <b>sugar chitin deriv</b>  |      |          |                 |          |
| IT Hair preparations<br>(growth stimulants, <b>sugars</b> and blood plasma and   |      |          |                 |          |

hair growth stimulants, **sugars** and blood plasma and  
 IT 1991-01-04, Chitin **1398-61-4D, Chitin, derivs**  
 1991-01-04, Chitosan

(hair growth stimulants contg. **sugars** or plasma or plasma expanders and)

L34 ANSWER 24 OF 25 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1990:434180 HCAPLUS

DOCUMENT NUMBER: 113:34180

TITLE: Separation of saccharides on cross-linked chitosan beads with microcolumn liquid chromatography

AUTHOR(S): Jinno, Kiyokatsu; Takayama, Katsumi

CORPORATE SOURCE: Sch. Mater. Sci., Toyohashi Univ. Technol., Toyohashi, 440, Japan

SOURCE: Journal of Microcolumn Separations (1989), 1(4), 195-9  
CODEN: JMSEJ; ISSN: 1040-7685

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Porous chitosan beads cross-linked by hexamethylenebis-2,3-epoxypropyldimethylammonium chloride (Chitopearl 2500) were methylated to prevent adsorption of solutes on the hydroxy groups and to be used as the stationary phase in anion-exchange liq. chromatog. The beads were derivatized without loss of their gel permeability. Sepn. of some monosaccharides was achieved with the beads when boric acid soln. was used as the mobile phase. Resoln. for monosaccharides was remarkably improved by selecting a suitable pH and concn. of boric acid in the mobile phase. In order to detect saccharides by UV, a postcolumn derivatization method with 2-cyanoacetamide was adopted.

CC 80-4 (Organic Analytical Chemistry)

ST anion exchange chromatog **saccharide chitosan**

**deriv; saccharide** sepn amine exchange chromatog;

**chitosan** cross linked ion exchanger **saccharide;**

Chitopearl 2500 methylated ion exchanger **saccharide**

IT 50-69-1, D-Ribose 50-99-7, D-Glucose, analysis 57-50-1, Sucrose, analysis 58-86-6, D-Xylose, analysis 59-23-4, D-Galactose, analysis **63-42-3, Lactose 69-79-4, Maltose**

597-12-6, Melezitose 1114-34-7, D-Lyxose 3458-28-4, D-Mannose

5328-37-0, L-Arabinose 34612-38-9 34620-78-5, Maltoseptaose

PL: ANST (Analytical study); PROC (Process)

(sepn. of, from saccharides by liq. chromatog. on cross-linked chitosan)

L34 ANSWER 25 OF 25 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1984:156910 HCAPLUS

DOCUMENT NUMBER: 100:156910

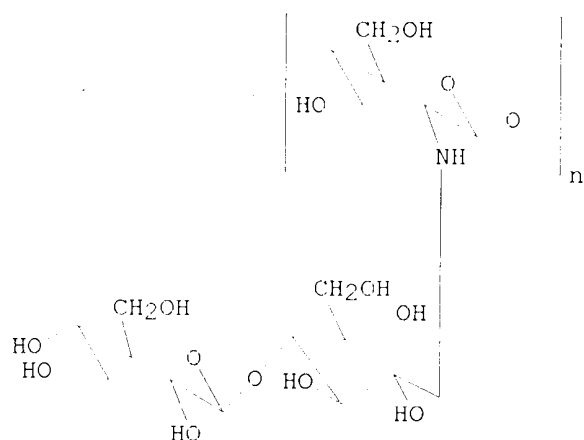
TITLE: Some chemical and analytical aspects of polysaccharide modifications. III. Formation of branched-chain, soluble chitosan derivatives

AUTHOR(S): Yalpani, Mansur; Hall, Laurance D.

CORPORATE SOURCE: Dep. Chem., Univ. British Columbia, Vancouver, BC, V6T 1Y6, Can.

SOURCE: Macromolecules (1984), 17(3), 272-81

CODEN: MAMORY; ISSN: 0025-0424



AB Specific attachment of carbohydrates to the 2-amino functions of chitosan transforms this water-insol., linear polymer into branched-chain water-sol. derivs. Facile conversions can be achieved by reductive alkylation using  $\text{NaCNBH}_3$  and any aldehyde or keto sugar, by Schiff's base formation, or by amidation reactions using carboxylic acid or lactone derivs. Exptl. results are presented for a series of mono-, di-, and tri-, and polysaccharides, including D-glucose, N-acetylglucosamine, D-glucosamine, D-galactose, D-galactosamine, D-fructose, D-glucoheptonic acid .gamma.-lactone, lactose, cellobiose, maltose, melibiose, maltotriose, streptomycin sulfate, C6-aldehyde-cycloheptamylose, and dextran. These procedures facilitate the prepn. of polymer derivs. with a variety of comb-like, tree-like, and other branching types. Many of these products are amenable to further, specific chem. modifications; this is demonstrated by the introduction, via galactose oxidase treatment, of C-6 aldehyde functions into the pendant galactose residues of derivs. I. The synthetic chitosan derivs. exhibit a no. of useful and uncommon properties in terms of their soln. characteristics. I formed inclusion complexes with iodine, lactose, and 4-oxo-2,2,6,6-tetramethylpiperidine-1-oxyl. Soly. modifications were accomplished by co-reaction of hydrophilic (lactose) and hydrophobic (various alkyl) residues, affording products which were sol. in both aq. and org. media. Reductive alkylation of chitin afforded the 1-deoxylactit-1-yl deriv. which was water insol. but formed sols in water and several org. solvents. Factors affecting the soln. behavior of chitosan and its branched derivs. have been evaluated and mechanisms have been discussed for solute interactions and conformational transitions.

CC 33-7 (Carbohydrates)

ST **chitosan** branched chain **deriv**; reductive alkylation  
**chitosan** sugar; soly **chitosan** **deriv**;  
gelation **chitosan** **deriv**; inclusion compd  
**chitosan** **deriv**; chitin **deriv**

63-42-3 69-79-4

63-42-3 69-79-4 528 50-7

**585-99-9** 1109-28-0 3416-24-8 7512-17-6 7535-00-4  
9004-54-0, reactions

PL: RCT (Reactant); PACT (Reactant or reagent)  
(reductive N-alkylation of chitosan with)

IT 1398-61-4

PL: RCT (Reactant); PACT (Reactant or reagent)  
(reductive N-alkylation of, with **lactose**)

IT **9012-76-4**

PL: RCT (Reactant); PACT (Reactant or reagent)  
(N-alkylation of, with **carbohydrates**, branched-chain sol.  
**derivs.** from)

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(FILE 'WPIDS' ENTERED AT 11:40:56 ON 29 MAY 2003)

DEL HIS Y

|     |   |
|-----|---|
| L1  | 6345 S CHITOSAN# OR CHITIN#   |
| L2  | 1868 S L1 (S) (DEACETYL? OR DERIV?)                                   |
| L3  | 82845 S ?SACCHARIDES OR SUGAR# OR ?SACCHARIDE OR LACTOSE OR MALTOSE O |
| L4  | 1283 S PHOTO REACT? OR PHOTOREACT?                                    |
| L5  | 654 S AMPHIPAT?   |
| L6  | 772 S GLYCOSAMINOGLYCAN#  |
| L7  | 576 S L2 (L) L3   |
| L8  | 10050 S LACTOSE OR MALTOSE OR MELIBIOSE OR CELLOBIOSE OR LAMINARIBIOS |
| L9  | 51 S L8 AND L7  |
| L10 | 1 S L9 AND MEDICAL  |
| L11 | 2 S L9 AND HEALTH   |
| L12 | 912 S L2 AND (A96 OR D22)/DC  |
| L13 | 27 S L12 AND L9   |
| L14 | 2 S L4 AND L5   |
| L15 | 7 S L5 (L) L2   |
| L16 | 1 S L13 AND REDUCT TEFMIN?  |
| L17 | 43 S L2 (L) L6  |
| L18 | 39 S L17 AND (MEDICAL OR HEALTH OR L12)                               |
| L19 | 13 S L18 AND HEPAFIN#   |
| L20 | 26 S L10 OR L11 OR L14 OR L15 OR L16 OR L19                           |

L1 6345 S CHITOSAN# OR CHITIN#  
L2 1868 S L1 (S) (DEACETYL? OR DERIV?)  
L3 82845 S ?SACCHARIDES OR SUGAR# OR ?SACCHARIDE OR LACTOSE OR MALTOSE O  
L4 1283 S PHOTO REACT? OR PHOTOREACT?  
L5 654 S AMPHIPAT?  
L6 772 S GLYCOSAMINOGLYCAN#  
L7 576 S L2 (L) L3  
L8 10050 S LACTOSE OR MALTOSE OR MELIBIOSE OR CELLOBIOSE OR LAMINARIBIOS  
L9 51 S L8 AND L7  
L10 1 S L9 AND MEDICAL  
L11 2 S L9 AND HEALTH  
L12 912 S L2 AND (A96 OR D22)/DC  
L13 27 S L12 AND L9  
L14 2 S L4 AND L5  
L15 7 S L5 (L) L2  
L16 1 S L13 AND REDUCT TEFMIN?  
L17 43 S L2 (L) L6  
L18 39 S L17 AND (MEDICAL OR HEALTH OR L12)  
L19 13 S L18 AND HEPAFIN#  
L20 26 S L10 OR L11 OR L14 OR L15 OR L16 OR L19

L4 1283 SEA FILE=WPIDS ABB=ON PLU=ON PHOTO REACT? OR PHOTOREACT?  
 L5 654 SEA FILE=WPIDS ABB=ON PLU=ON AMPHIPAT?  
 L6 772 SEA FILE=WPIDS ABB=ON PLU=ON GLYCOSAMINOGLYCAN#  
 L7 576 SEA FILE=WPIDS ABB=ON PLU=ON L2 (L) L3  
 L8 10050 SEA FILE=WPIDS ABB=ON PLU=ON LACTOSE OR MALTOSE OR MELIBIOSE  
 OR CELLOBIOSE OR LAMINARIBIOSE OR MANNOBIOSE  
 L9 52 SEA FILE=WPIDS ABB=ON PLU=ON L8 AND L7  
 L10 3 SEA FILE=WPIDS ABB=ON PLU=ON L9 AND MEDICAL  
 L11 2 SEA FILE=WPIDS ABB=ON PLU=ON L9 AND HEALTH  
 L12 913 SEA FILE=WPIDS ABB=ON PLU=ON L2 AND (A96 OF D22)/DC  
 L13 27 SEA FILE=WPIDS ABB=ON PLU=ON L12 AND L9  
 L14 3 SEA FILE=WPIDS ABB=ON PLU=ON L4 AND L7  
 L15 7 SEA FILE=WPIDS ABB=ON PLU=ON L5 (L) L2  
 L16 1 SEA FILE=WPIDS ABB=ON PLU=ON L13 AND REDUC? TERMIN?  
 L17 43 SEA FILE=WPIDS ABB=ON PLU=ON L2 (L) L6  
 L18 39 SEA FILE=WPIDS ABB=ON PLU=ON L17 AND (MEDICAL OR HEALTH OR  
 L12)  
 L19 13 SEA FILE=WPIDS ABB=ON PLU=ON L18 AND HEPARIN#  
 L20 26 SEA FILE=WPIDS ABB=ON PLU=ON L10 OR L11 OR L14 OR L15 OR L16  
 OR L19

=> d .wp 120 1-26

L20 ANSWER 1 OF 26 WPIDS (C) 2003 THOMSON DERWENT  
 AN 2003-329048 [31] WPIDS  
 DMC C2003-085579  
 TI In vitro amplification of heterogeneous mRNA, by dephosphorylating sample  
 RNA, removing cap structure from full-length mRNA, adding synthetic RNA  
 adapter, synthesizing single, double stranded cDNAs, amplifying mRNA.  
 DC B04 D16  
 IN ZHOU, M  
 PA (ZHOU-I) ZHOU M  
 CYC 1  
 PI US 2002197685 A1 20021226 (200331)\* 7p  
 ALT US 2002197685 A1 Provisional US 2001-299413P 20010620, US 2002-174739  
 20020619  
 PFAI US 2001-299413P 20010620; US 2002-174739 20020619  
 AB US 2002197685 A UPAB: 20030516  
 NOVELTY In vitro amplification (M) of heterogeneous full length mRNA  
 comprising dephosphorylating RNA (total or mRNA) obtained from biological  
 sample, removing the 5' end cap structure from the full length mRNA,  
 adding a synthetic RNA adapter containing an RNA polymerase site to 5' end  
 of the decapped mRNAs, synthesizing single and double stranded cDNAs, and  
 producing amplified mRNA by in vitro transcription, is new.  
 DETAILED DESCRIPTION - (M) involves isolating mRNA from biological  
 samples, removing the 5'-phosphates from truncated mRNAs and non-mRNAs  
 with calf intestinal phosphatase (CIP), which leaves the capped mRNAs  
 unaffected, removing the 5'-end cap structure (Gppp.triphosphate) from the  
 full-length mRNAs, leaving a 5' monophosphate for subsequent ligation.

The RNA polymerase and a synthetic RNA adapter are then primed  
 complementary to the RNA adapter, capturing full length cDNAs on a solid  
 phase through specific binding interaction between the first group (e.g.,

streptavidin) bound to the solid support, using the captured full-length cDNAs for in vitro transcription to produce mRNAs, and repeating the step, if necessary, in order to obtain a large amount of amplified mRNA.

USE - (M) is useful for in vitro amplification of heterogeneous full length mRNA (claimed). The amplified full length mRNA can be used to amplify the protein content of a given type of cells/tissues when coupled with in vitro translation system. The method is useful in biology and medicine, including analysis of gene function, differential gene expression, protein discovery, cellular and clinical diagnostics, and drug screening. The method is also useful for gene expression profiling, meaning to characterization of both mRNA (transcription) and protein (translation) for any given type of cells/tissues. The method is also useful in proteomics, which involves the systemic identification and characterization of proteins that are present in biological samples so that their role in **health** and disease can be determined. Such information is valuable in diagnosis, prognosis, and monitoring response to therapy, and in elucidating disease mechanisms and identifying therapeutic targets for the prevention and treatment of disease.

ADVANTAGE - The method is a robust system for amplifying a complete set of mRNA in a given type of cells/tissues.

Dwg. 0/2

TECH

UPTX: 20030516

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Method: The synthetic polynucleotide adapter refers to RNA and DNA, as well as nucleotide analogs e.g. phosphorothioates, phosphorodithioates, phosphorotriesters, phosphoramidates, boranophosphates, methylphosphonates, chiral-methyl phosphonates, 2'-O-methyl ribonucleotides and peptide-nucleic acids (PNAs). PNA polymerase promoter is T3, T7, SP6 or M13 RNA polymerase promoter. The method further involves preparing probes for microarray hybridization, and for cDNA library construction and gene cloning. The method further involves preparing mRNA/cDNA-based expression arrays, incorporating specific groups/tags into the transcription products to facilitate the identification, characterization or profiling of the products. The method further involves in vitro translation of the amplified transcription products and incorporating specific groups/tags into the translation products to facilitate the identification, characterization or profiling of the products. The groups/tags comprises a binding domain which is **derived** from a polypeptide selected from glutathione-S-transferase (GST), **maltose**-binding protein, **chitin**, cellulase, thioredoxin, avidin, streptavidin, green fluorescent protein, Protein L and Protein G/A.

L20 ANSWER 2 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 2003-267951 [26] WPIDS

DNC C2003-069730

TI Formulation useful for enhancing peak concentrations in CNS tissues or fluids and for treating e.g. Parkinson's disease, comprises dopamine agonist and at least one delivery enhancing agent.

DC F02 B04 B07

IN QUAY, S C

H: AF AG AL AM AT AV AZ BA BE BG BY BO CA CH CI CL CM CN CO  
 CU CV CX CY DZ DE DG DI DJ DK DL DM DN DO DR DU DV DW DX DY  
 EZ FA FB FC FE FG FH FI FK FL FM FN FO FR FS FT FU FV FW FX FY  
 GZ HA HB HC HE HF HG HI HL HM HN HO HR HS HT HU HV HW HX HY  
 IZ JA JB JC JE JF JG JH JI JL JM JN JO JR JS JT JU JV JW JX JY  
 KZ LA LB LC LE LF LG LH LI LJ LK LM LN LO LR LS LT LU LV LW LX LY  
 MZ NA NB NC NE NF NG NH NI NJ NK NL NO NR NS NT NU NV NW NX NY  
 OZ PA PB PC PE PF PG PH PI PJ PK PL PO PR PS PT PU PV PW PX PY  
 QZ RA RB RC RE RF RG RH RI RJ RK RL RO RR RS RT RU RV RW RX RY  
 SZ TA TB TC TE TF TG TH TI TJ TK TL TO TR TS TU TV TW TX TY  
 VZ WZ XZ YZ ZZ

RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM  
ZW

ADT WO 2003000018 A2 WO 2002-US20171 20020624

PRAI US 2001-891630 20010625

AB WO2003000018 A UPAB: 20030428

NOVELTY - Stable formulation (A) comprising dopamine receptor agonist (I) and at least one delivery-enhancing agent (II), which when administered mucosally to a mammalian subject yields a peak concentration of (I) in central nervous system (CNS) tissue or fluid that is at least 5% greater than the peak concentration of (I) in blood plasma.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) (A) comprising one or more mucosally administered dopamine receptor agonists (I), which yields greater peak concentration of (I) in CNS tissue or fluid compared to that observed following administration of same dose by injection; and

(2) preparation of (A).

ACTIVITY - Antiparkinsonian; Relaxant; Anxiolytic; Endocrinal; Vasotropic.

The efficacy of formulations of the invention was assessed in a non-blinded study to determine the uptake of intranasal administration of apomorphine hydrochloride (Ia) into the cerebrospinal fluid in healthy male volunteers. A formulation comprising 0.25 or 0.50 (al % w/w) of (Ia) in conjunction with 0.68% anhydrous citric acid, 0.44% sodium citrate dihydrate, 7.0% propylene glycol and further ingredients was used. Results show that while prior art formulations (s.c. injection) provided 2.5% to 4.3% levels in the CSF compared to the plasma, the formulation of the invention provided CNS levels of 26.7% to 44.1% relative to plasma levels under comparable experimental conditions.

MECHANISM OF ACTION - Dopaminergic.

USE - For increasing peak concentrations of dopamine receptor agonists in central nervous system tissues or fluids or cerebral spinal fluid, useful for the treatment of Parkinson's disease, male or female erectile dysfunction, sexual dysfunction, diminished sexual desire, diminished ability to reach orgasm during sexual stimulation (all claimed), and for the delivery of androgens, estrogens, progestins, muscle relaxants, vasodilators, antihistamines, antitussives, antiepileptics, enzymes, anti-fungal agents, antibacterials, anti-cancer agents, antioxidants, antiarrhythmic agents, antihypertensives, antibodies, anti-sense oligonucleotides and RNA, DNA and viral vectors comprising genes encoding therapeutic peptides and proteins.

ADVANTAGE - (A) provides simpler route for mucosal administration that is fast acting, easily administered and causes no substantial adverse mucosal side effects. (A) also provides for increased bioavailability of (I) in CNS tissue or fluid.

Dwg.0/1

TECH

UPTX: 20030428

TECHNOLOGY FOCUS - PHARMACEUTICALS - Preferred Enhancing Agent: (II) consists of at least one of:

- (a) aggregation inhibitory agent;
- (b) charge modifying agent;

1. A formulation comprising:  
I. a dopamine receptor agonist;  
II. a delivery-enhancing agent;  
III. a buffer salt;

- (iv) alcohol;
- (v) enamine;
- (vi) NO donor compound;
- (vii) long chain **amphipathic** molecule;
- (viii) small hydrophobic penetration enhancer;
- (ix) sodium or salicylic acid **derivative**;
- (x) glycerol ester of acetoacetic acid;
- (xi) cyclodextrin or beta-cyclodextrin **derivative**;
- (xii) chelating agent;
- (xiii) medium chain fatty acid;
- (xiv) amino acid or salt;
- (xv) enzyme degradative to a selected membrane component;
- (xvi) inhibitor of fatty acid synthesis; and/or
- (xvii) inhibitor of cholesterol synthesis;
- (h) modulatory agent of epithelial junction physiology;
- (i) vasodilator agent;
- (j) selective transport-enhancing agent; and/or
- (k) stabilizing delivery vehicle, carrier, support or complex-forming species with which (I) is effectively combined, associated, contained, encapsulated or bound.

Preferred Composition: Mucosally administered (A) may be formulated to yield a peak dopamine receptor agonist concentration in cerebral spinal fluid that is 5 -10 % (most preferably 40 %) greater compared to peak concentration of dopamine receptor agonist in blood plasma. The formulation is substantially particulate free. (A) may also incorporate a **chitosan** or **chitosan derivative** such as poly-CuD. The pH is adjusted to 3.0 - 6.0 (most preferably 3.0 - 3.5).

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Materials: (II) consists of citric acid, sodium citrate, propylene glycol, glycerin, L-ascorbic acid, sodium metabisulfite, edetate disodium, benzalkonium chloride and/or sodium hydroxide.

L20 ANSWER 3 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 2002-698555 [75] WPIDS

DNN N2002-550874      DNC C2002-197768

TI Administering closure forming or bulking up composition in minimally invasive surgery, comprises mixing water insoluble particle and carrier and applying to lumen.

DC **A96** B05 D22 F32 F34

IN DONDA, F. S.; WIEGNEN, J. F.

PA (DOND-1) DONDA E. S; (WIFE-2) WIRONEN J F; (EEGE-N) REGENERATION

TECHNOLOGIES INC

CYC 96

PI WO 2002062404 A2 20020815 (200275)\* EN 51p

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
NL OA PT SD SE SL SN TR TZ UG ZM ZW

W: AE AG AL AM AT AU AV BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK  
DM EE EF EG EH EI EL EN EO EP EQ ER ES ET EV EX FY GZ HA HB HC HD HE  
HF HG HH HI HL HM HN HO HP HQ HR HS HT HU HV HW HY HZ IZ JZ KZ LZ  
MZ NA NB NC ND NE NF NG NH NI NJ NK NL NN NO NP NR NS NT NU NV

PRAI US 2001-16602 20011022; US 2001-776404 20010202; US 2001-865318  
20010525

AB WO 200262404 A UPAB: 20021120

NOVELTY - Administering a closure forming or bulking up composition (305) in a living mammal comprises mixing at least one type of water insoluble particle and a carrier, to form a composition applying the composition to at least one specific area of a lumen or other body region to close or bulk up the specific area.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) an implantable composition comprising water insoluble particles and a carrier compound, where when combined in a liquid, the water insoluble particles are suspended in a solution;

(2) a kit comprising the implantable composition comprising water-insoluble particles that promote cellular inflammation, infiltration and/or adhesion, and a carrier to form a paste or suspension and instructions for delivering the composition to form an occlusion in the lumen, or a bulking up area in the tissue or organ, and

(3) an expandable tissue based sponge for implantation into the lumen.

USE - Used in minimally invasive surgical procedures, particularly percutaneous application of a composition that blocks the lumen of a body tube, repairs ruptured tissues, or bulks up tissue or organ of sphincter muscles and vocal chords to induce a change in voice. The method is particularly used for reducing or stopping menorrhea and repairing a ruptured interverbral disc. The method is used for treating anorectal and/or urinary incontinence by increasing the competency of the sphincter muscles.

ADVANTAGE - The composition promotes formation of adhesion, closes the lumen of the vas deferens or fallopian tubes for sterilization, blocks the entrance to the uterus for sterilization during birth control, makes the muscle more effective in shutting the urethral canal; injecting the compositions into the vocal chords, to induce a change in voice. The sponge promotes Asherman's syndrome when implanted into a uterus. The implant is highly compressible when dehydrated, so that it may be unfolded while placing in the barrel of a syringe. The implant expands when injected in the lumen of a body cavity and produces blockage of the lumen.

The administration of the biomaterial via implant or injection is minimally invasive and can be performed on an outpatient basis, resulting in a lower cost than other surgical forms of sterility or birth control. The procedure also eliminates patient complaints, since the patient need not follow any specific instructions or remembered to ingest or insert other forms of birth control pills or diaphragms. The composition has increased retention in the body, with the decreased rate of rejection.

DESCRIPTION OF DRAWING(S) - The figure (3A) shows a cross section of the tissue comprising epidermis, dermis, and sub-dermis layers and associated cells; (3b) shows injection of a biomaterial into the dermis layer of tissue which causes an immune response in surrounding tissue and (3c) shows swelling of tissue resulting from immune response to injection of material.

1. A water insoluble particle which promotes responsive body processes, is obtained from fine particles of bone or hydroxyapatite with a particle size of 1-70 microns.

125-250  $\mu\text{m}$ , collagen shards with particle size of 125-250  $\mu\text{m}$ , insoluble salts, or talc. The carrier comprises collagen, gelatin, carboxymethyl cellulose, **glycosaminoglycans**, proteoglycans, polyvinyl alcohol, thrombin, fibrin, albumin, aphiphillic **derivatives** of sodium alginate, **chitosan**, polyalcohols, polyamines, polyvinyls, polyamides, polyesters, polyanhydrides, polyortho esters, polyurethanes, polycarbonates, polyphosphazines, polysilicates, Zyderm (TM), Zyplast (TM), Fibrel (TM), Dermologen (TM), micronized Alloderm (TM), Isologen (TM), Bioplastique (TM), Arteplast (TM), Artecoll (TM), Formacryl (TM), hydrogels, ePTFE and/or CoSeal.

The carrier also includes an additive comprising growth factors (platelet-**derived** growth factor, fibroblast growth factor, vascular endothelial cell growth factor, bone morphogenetic protein, endothelial growth factor, endothelial cell growth factor or platelet-**derived** growth factor) and/or biologically active agents (hyaluronic acid, chondroitin sulfate, keratin sulfate, dermatan sulfate, **heparin**, **heparin** sulfate, galactosaminoglycuronoglycan sulfate, proteoglycans, members of the selectin, IgSF, Integrin or Cadherin superfamilies, laminin, entactin, nidogen and/or recombinant osteogenic protein-1)). The carrier is thermoplastic gelatin.

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Kit: The instructions in the kit provide steps for mixing the water-insoluble particles and carrier in a syringe (110) having a flexible area of its barrel to facilitate mixing.

TECHNOLOGY FOCUS - BIOLOGY - Preferred Method: Lessening or cessation of menorrhea involves applying the composition to cervix through a catheter, and further constructing the expandable sponge and implanting into the uterine cavity. Sponge is dehydrated and compressed to fit inside a syringe and injected into the lumen or cavity to form occlusion. Dehydrated sponge is rehydrated in situ to expand to normal size. Implant is held in place through coagulation of blood surrounding the implant. Preferred Closure: The closure for a lumen or channel is vas deferens, tear, salivary gland, sweat gland ducts, arteriovenous connection, arteriovenous anastomosis, artery supplying a tumor, capillary plexus supplying tumor, or man-made channel in need of the closure.

L20 ANSWER 4 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 2002-503501 [62] WPIDS

DNC C2002-164325

TI Bioemulsifier composition useful for forming and stabilizing oil-in-water emulsion, has an esterase protein found in association with emulsan in *Acinetobacter*, and a water-soluble polysaccharide polymer of any source.

DC D13 D16 D21

IN BACH, H R; GUTNICK, D L; GUTNICK, D

PA (UYFA-I) UNIV RAMOT APPLIED RES & IND DEV LTD; (BACH-I) BACH H R; (GUTN-I) GUTNICK D L

CYC 100

RE 13 DE 16 DS 17 DT 18 DU MA ME MI MM MN MW MX MY N N1 N2 N3 N4 N5 N6 N7 N8 N9 NH NI NJ NK NL NM NO NP NR NU NV NZ OA OB OC OD OE OF OH OI OJ OK OL OM ON OP OR OS OT OU OV OW OX OY OZ VA VB VC VD VE VF VG VH VI VJ VK VL VM VN VO VP VQ VR VS VT VU VV VY VZ WA WB WC WD WE WF WG WH WI WJ WK WL WM WN WO WP WQ WR WS WT WU WV WY WZ XA XB XC XD XE XF XG XH XI XJ XK XL XM XN XO XP XQ XR XS XT XU XV XW XY XZ YA YB YC YD YE YF YG YH YI YJ YK YL YM YN YO YP YQ YR YS YT YU YV YW YX YZ ZA ZB ZC ZD ZE ZF ZG ZH ZI ZJ ZK ZL ZM ZN ZO ZP ZQ ZR ZS ZT ZU ZV ZW ZX ZY ZZ

AU 2002022483 A 20020624 (200267)

US 2002143071 A1 20021003 (200267)

US 6512014 B2 20030128 (200311)

ADT WO 2002048327 A2 WO 2001-IL1155 20011212; AU 2002022483 A AU 2002-22483 20011212; US 2002143071 A1 US 2000-734895 20001213; US 6512014 B2 US 2000-734895 20001213

FDT AU 2002022483 A Based on WO 200248327

PRAI US 2000-734895 20001213

AB WO 200248327 A UPAB: 20020926

NOVELTY - A bioemulsifier composition (I) comprising an esterase protein of 32.5 KD, or recombinant cells expressing esterase protein, where the protein is found in association with emulsan in the bacteria *Acinetobacter*, and a polysaccharide polymer of any source, or a biopolymer, is new.

DETAILED DESCRIPTION - (I) comprises:

(a) an esterase protein of 32.5 KD, where the protein is found in association with emulsan in the bacteria *Acinetobacter*, isolated from cell extracts from at least one strain of *Acinetobacter*, or recombinant preparations of the esterase protein isolated from esterase-producing vectors expressed in suitable hosts, or peptide fragments of the esterase protein produced in any of a variety of methods; and

(b) a polysaccharide polymer of any source, or a biopolymer.

Alternatively (I) comprises recombinant cells expressing an esterase protein of approximately 32.5 KD, or expressing fragments of the protein, and (b).

USE - (I) is useful for forming and stabilizing oil-in-water emulsions, by adding (I) and additionally disrupting the recombinant cells by heat, mechanical disruption or by using enzymes to release the cellular biomass, or treating the recombinant cells to expose the esterase protein (claimed). The composition is useful in numerous industries such as environmental management, health care, dental care, cosmetics and food product applications. A variety of crude and refined petroleum products including very hydrophobic refinery sludge can be emulsified using the esterase-apoemulsan composition. Applications in the petroleum industry include emulsification of various crude and refined oils as well as oily sludge wastes, clean-up, viscosity reduction, oil reclamation and heavy metal remediation. A number of other vegetable and mineral oil are also emulsified. The emulsifier complexes can also be employed in the bioremediation of heavy metals.

ADVANTAGE - The polymers are non-toxic and can therefore be applied immediately to specific applications in a variety of industrial and environmental settings.

Pwg.0/0

TECH

UPTX: 20020926

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Composition: The peptide fragments of the esterase protein are produced using proteolysis, genetic cloning or chemical synthesis. The polysaccharide polymer is water-soluble or **amphipathic** and is from bacterial, plant or a synthetic source. The biopolymer is a polyanionic heteropolysaccharide. The polysaccharide is agarose, gum arabic, carrageenan, dextran, pectin,

Specifically, the esterase protein is derived from *Acinetobacter* strain A12011 RAG 1, and has a specific amino acid sequence given in the

BD13. The polysaccharide polymer or bipolymer is produced in the esterase-expressing recombinant cells.

L20 ANSWER 5 OF 26 WPIDS (C) 2003 THOMSON DERWENT  
 AN 2002-556413 [59] WPIDS  
 CR 2001-091750 [10]; 2001-244222 [25]  
 DNN N2002-440361 DNC C2002-157714  
 TI Pharmaceutical composition forming clear dispersion on mixing with water, containing triglyceride, combination of surfactants and drug, e.g. polysaccharide such as the antithrombotic agent and anticoagulant **heparin**.  
 DC **A96** B04 B07 V06  
 IN CHEN, F; FIKSTAD, D T; PATEL, M V  
 PA (CHEN-I) CHEN F; (FIKS-I) FIKSTAD D T; (PATE-I) PATEL M V; (LIPO-N) LIPOCINE INC  
 CYC 100  
 PI US 2002032171 A1 20020314 (200259)\* 45p  
 WO 2002053100 A2 20020711 (200259) EN  
 RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
 NL OA PT SD SE SL SZ TR TZ UG ZM ZW  
 W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK  
 DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR  
 KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT  
 RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW  
 ADT US 2002032171 A1 CIP of US 1999-345615 19990630, CIP of US 1999-375636 19990817, CIP of US 2000-751968 20001229, US 2001-877541 20010608; WO 2002053100 A2 WO 2001-US50752 20011228  
 FDT US 2002032171 A1 CIP of US 6267985, CIP of US 6309663  
 PRAI US 2001-877541 20010608; US 1999-345615 19990630; US 1999-375636 19990817; US 2000-751968 20001229  
 AB US2002032171 A UPAB: 20020916  
 NOVELTY - A pharmaceutical composition (A) comprises an active agent (I) and a carrier (II) consisting of a triglyceride (TG) and at least two surfactants (ST) (at least one of which is hydrophilic), the amounts of TG and ST being such that a clear aqueous dispersion (absorbance less than 0.3 at 400 nm) is formed when (II) is mixed at 1 wt. % with an aqueous medium.  
 DETAILED DESCRIPTION - A pharmaceutical composition (A) comprises an active agent (I) and a carrier (II) consisting of a triglyceride (TG) and at least two surfactants (ST) (at least one of which is hydrophilic), the amounts of TG and ST being such that a clear aqueous dispersion (absorbance less than 0.3 at 400 nm) is formed when (II) is mixed at 1 wt. % with an aqueous medium. (I) is polysaccharide drug or oil-soluble vitamin; or may be any therapeutic agent provided that (II) contains at least one hydrophobic ST in an amount greater than that remaining solubilized in the absence of TG.  
 INDEPENDENT CLAIMS are included for:  
 (1) various (A)-based dosage forms;  
 (2) methods for treating mammalian patients by administration of (A);

USE The composition is used for the improved formulation of triglycerides and improved delivery of therapeutic agents.

delivery properties, allowing an increased loading capacity and often giving an increased rate and/or degree of bioabsorption of (I). In particular TG can be dissolved in amount greater than that possible in the absence of hydrophobic surfactant and the hydrophobic surfactant can be dissolved in an amount greater than that in the absence of TG. (A) form clear dispersions, and are homogeneous and thermodynamically stable. In particular chemically and physically stable polysaccharide drug formulations can be obtained.

Iwg.0/0

TECH

UPTX: 20020916

TECHNOLOGY FOCUS - PHARMACEUTICALS - Preferred Triglycerides: TG is selected from vegetable oils (optionally partially or completely hydrogenated), fish oils, animal fats and synthetic, modified or fractionated TG's (or mixtures), the triglyceride is selected from almond, babassu, borage, blackcurrant seed, canola, castor, coconut, corn, cottonseed, evening primrose, grapeseed, groundnut, mustard seed, olive, palm, palm kernel, peanut, rapeseed and safflower oil or hydrogenated castor, coconut, palm, soybean, vegetable, cottonseed or castor oil; or partially hydrogenated soybean oil, soy oil, glyceryl tricaprate, glyceryl tricaprlylate, glyceryl tricaprte, glyceryl trilinoleate, glyceryl triundecanoate, glyceryl trilaurate, glyceryl trioleate, glyceryl trilinoleate, glyceryl tricaprlylate/caprte, glyceryl tricaprlylate/caprte/laurate, glyceryl tricaprlylate/caprte/linoleate, glyceryl tricaprlylate/caprte/stearate, saturated polyglycolized glycerides, linoleic glycerides, caprylic/capric glycerides, modified triglycerides and/or fractionated triglycerides.

Preferred Surfactants: The ST component comprises at least two hydrophilic ST's or at least one hydrophobic ST and at least one hydrophilic ST. The hydrophilic ST's are nonionic (HLB value 10 or more) and/or ionic. The nonionic hydrophilic ST's are preferably alkyl glucosides or maltosides, alkyl thioglucosides, lauryl macroglycerides, polyoxyethylene (POE) alkyl ethers, POE alkylphenols, polyethylene glycol (PEG) fatty acid esters, PEG glycerol fatty acid esters, POE sorbitan fatty acid esters, POE-polyoxypropylene block copolymers, polyglycerol fatty acid esters, POE glycerides, POE sterols, POE vegetable oils (optionally hydrogenated), sugar ethers or esters or reaction mixtures obtained from polyols and one or more of fatty acids, glycerides, optionally hydrogenated mineral oils and sterols. The ST is preferably PEG-10 laurate, PEG-20 laurate, PEG-12 laurate, PEG-32 laurate, PEG-32 dilaurate, PEG-12-oleate, PEG-15 oleate, PEG-10 oleate, PEG-20 dioleate, PEG-32 oleate, PEG-200 oleate, PEG-400 oleate, PEG 15 stearate, PEG-32 distearate, PEG-40 stearate, PEG-100 stearate, PEG 20 dilaurate, PEG-25 glyceryl trioleate, PEG-32 dioleate, PEG-10 glyceryl laurate, PEG-30 glyceryl laurate, PEG 20 glyceryl stearate, PEG-20 glyceryl oleate, PEG-30 glyceryl oleate, PEG-30 glyceryl laurate, PEG-40 glyceryl laurate, PEG-40 palm kernel oil, PEG-50 hydrogenated castor oil, PEG-40 castor oil, PEG-35 castor oil, PEG-60 castor oil, PEG-40 hydrogenated castor oil, PEG-60 hydrogenated castor oil, PEG-60 corn oil, PEG-6 caprate/caprlylate glycerides, PEG-8 caprate/caprlylate glycerides, polyglyceryl 10 laurate, PEG-30 cholesterol, PEG-25 phyto sterol, PEG-30 soya sterol, PEG-20 trioleate, PEG-40 sorbitan oleate.

alkyl phenol and/or polyoxamer. The ionic hydrophilic ST's are preferably alkylammonium salts, bile salts, trisphosphoric acid, fatty acid esters, etc.

polypeptides, acyl lactylates, mono- and diacetylated tartaric acid esters of mono- and diglycerides, succinylated monoglycerides, citrate esters of mono- and diglycerides, alginate salts, propylene glycol alginate, optionally hydrogenated lecithins or lysolecithins, lyso-phospholipids, carnitine fatty acid ester salts, phospholipids, alkyl sulfate salts, fatty acid salts or sodium docusate.

The ionic hydrophilic ST's are preferably lecithin, lysolecithin, phosphatidyl choline, phosphatidylethanolamine, phosphatidylglycerol, phosphatidic acid, phosphatidyl serine, lysophosphatidylserine, lysophosphatidylcholine, lysophosphatidylethanolamine, lysophosphatidylglycerol, lysophosphatidic acid, lysophosphatidylserine, PEG-phosphatidylethanolamine, PVP-phosphatidylethanolamine, lactic esters of fatty acids, stearyl-2-lactylate, stearyl lactylate, succinyl monoglycerides, mono/diacetylated tartaric acid esters of mono/diglycerides citric acid ester, cholate, taurocholate, glycocholate, deoxycholate, taurodeoxycholate, chenodeoxycholate, glycodeoxycholate, glycochenodeoxycholate, taurochenodeoxycholate, taurodeoxycholate, glycourosodeoxycholate, cholylsarcosine, N-methyl taurocholate, caproate, caprylate, caprate, laurate, myristate, palmitate, oleate, ricinoleate, linoleate, linolenate, stearate, lauryl sulfate, tetraacetyl sulfate, docusate, lauroyl carnitine, palmitoyl carnitine, myristyl carnitine. The hydrophobic ST's have HLB value less than 10, and are preferably alcohols, POE alkyl ethers, fatty acids, bile acids, optionally acetylated glycerol fatty acid esters, lower alcohol or PEG fatty acid esters, PEG or polypropylene glycol glycerol fatty acid esters, POE glycerides, lactic acid esters of mono/diglycerides, propylene glycol diglycerides, sorbitan fatty acid esters, POE-polyoxypropylene block copolymers, transesterified vegetable oils, sterols, sugar esters, sucroglycerides, POE vegetable oils (optionally hydrogenated) or reaction mixtures obtained from polyols and one or more of fatty acids, glycerides, optionally hydrogenated mineral oils and sterols.

The hydrophobic ST's are preferably PEG 1-4 stearate, PEG 2-4 oleate, myristic acid, oleic acid, lauric acid, stearic acid, palmitic acid, PEG-4 dilaurate, PEG-4 dioleate, PEG-4 distearate, PEG-6 dioleate, PEG-6 distearate, PEG-8 dioleate, PEG 3-16 castor oil, PEG 5-10 hydrogenated castor oil, PEG 6-20 corn oil, PEG 6-20 almond oil, PEG-6 olive oil, PEG-6 peanut oil, PEG-6 palm kernel oil, PEG-6 hydrogenated palm kernel oil, PEG-4 capric/caprylic triglyceride, mono, di, tri, tetra esters of vegetable oil and sorbitol, pentaerythrityl di, tetra stearate, tristearate, oleate, caprylate or caprate, polyglyceryl 2-4 oleate, polyglyceryl 3 dioleate, polyglyceryl-6 dioleate, polyglyceryl-10 trioleate, polyglyceryl 3 distearate, propylene glycol mono- or diesters of 6-22C fatty acid, (acetylated) monoglyceride of 6-22C fatty acid, diglycerides of 6-22C fatty acids, lactic acid esters of monoglycerides, lactic acid esters of diglycerides, cholesterol, phytosterol, PEG 5-20 soya sterol, PEG-6 sorbitan tetra, hexastearate, PEG-6 sorbitan tetraoleate, sorbitan monolaurate, sorbitan monopalmitate, sorbitan mono, trioleate, sorbitan mono, tristearate, sorbitan mono, tristearate, sorbitan monoiscostearate, sorbitan sesquisteate, sorbitan sesquioleate, PEG 2-5 cetyl ether, PEG 2-4 lauryl ether, PEG-2 cetyl ether, PEG 2

Preferred compositions: A composition containing a surfactant selected from alcohols, polyols, amides, esters and/or propylene glycol esters. The surfactant is preferably a polyoxypropylene block copolymer.

ethanol, isopropanol, butanol, benzyl alcohol, ethylene glycol, propylene glycol, butanediol, glycerol, pentaerythritol, sorbitol, mannitol, transutol, dimethyl isosorbide, polyethylene glycol, polypropylene glycol, polyvinylalcohol, hydroxypropyl methylcellulose, cyclodextrin ethyl propionate, tributyl citrate, acetyl triethylcitrate, acetyl tributylcitrate, triethylcitrate, ethyl oleate, ethyl caprylate, ethylbutyrate, triacetin, propylene glycol diacetate, caprolactone, delta-valerolactone, beta-butyrolactone, 2-pyrrolidone, 2-piperidone, N-methylpyrrolidone, N-ethylpyrrolidone, N-hydroxyethyl pyrrolidone, N-octyl pyrrolidone, N-laurylpyrrolidone, dimethylacetamide, polyvinylpyrrolidone, glycofurool and/or methoxy PEG.

(I) optionally contains one or more further additives selected from antioxidants, buffers, antifoams, detackifiers, preservatives, chelating agents, viscosity modulators, tonicity agents, flavorings, colorants, binders, fillers, plasticizers, lubricants and/or enzyme inhibitors (for stabilizing (I)). (A) may include an aqueous medium, i.e. water, a palatable diluent or a beverage; or be in liquid, semi-solid, solid or liquid concentrate form. (I) is dissolved or suspended in (II).

Polysaccharides (I) are preferably selected from glucosamine, **glycosaminoglycans** (specifically **heparin**, heparan, chondroitin, dermatan or hyaluronic acid), dextran, xylan, pentasaccharides, polygalacturonic or polymannuronic acid, **chitin** or their salts, esters or other **derivatives**, especially low molecular weight **heparin** (particularly enoxaparin, dalteparin, gammaparin, nadroxaparin, enoxaparin, certoparin, reviparin or pamaparin), heparan sodium, heparan or heparan sulfate; and (A) containing the polysaccharides are specifically used for preventing blood coagulation or treating thrombosis (all claimed). The oil-soluble vitamin (I) preferably has vitamin E activity, and is especially alpha-tocopherol (claimed). The general therapeutic agents (I) are hydrophobic or hydrophilic drugs, nutritional supplements or cosmetic agents, specifically peptidomimetics, peptides, proteins, oligonucleotides, oligodeoxynucleotides, RNA, DNA, genetic materials, clopidogrel, aspirin, ticlopidine, warfarin, dipyridamole, cilostazol, pentoxifylline, celcoxib, refecoxib, parecoxib or valdecoxib (all claimed). Numerous (several hundred) further drugs (I) are listed in the disclosure.

TECHNOLOGY FOCUS - POLYMERS - Preferred Materials: Numerous polymeric materials for use in (A) are specified in the claims, e.g. polyoxyethylene (POE) alkyl ethers, POE alkylphenols, polyethylene glycol (PEG) fatty acid esters, PEG glycerol fatty acid esters, POE sorbitan fatty acid esters, POE polyoxypropylene block copolymers, polyglycerol fatty acid esters, POE glycerides, POE sterols or POE vegetable oils as surfactants; and PEG, polypropylene polyvinyl alcohol, hydroxypropyl methyl cellulose or polyvinyl pyrrolidone as solubilizers.

L20 ANSWER 6 OF 26 WPIDS (C) 2003 THOMSON DEFWENT

AN 2002-510057 [55] WPIDS

DNN E2002-410923 DNC C2002-146734

TI New biodegradable, blood-compatible biopolymer comprising crosslinked polyubiquitin, forming hydrogels or matrices useful e.g. as wound

11 W 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

HW: AT BE CH CY DE DK EA ES FI FR GB GR HU IE IT KE LI LU MC MW NL  
NO OA SE SK TR UA US

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK  
 DM DZ EC EE ES FI GB GD GE GH GM HE HU ID IL IN IS JP KE KG KP KR  
 KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU  
 SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

AU 2001067181 A 20011211 (200255)

EP 1284942 A2 20030226 (200319) EN

R: AL AT BE CH CY DE DK ES FI FF GB GE IE IT LI LT LU LV MC MK NL PT  
EO SE SI TR

ADT WO 2001041814 A2 WO 2001-CA784 20010529; AU 2001067181 A AU 2001-67181  
20010529; EP 1284992 A2 EP 2001-944783 20010529; WO 2001-CA784 2001052

FDT AU 2001067181 A Based on WO 200191814; EP 1284992 A2 Based on WO 200191814

PRAI US 2000-207325P 20000530

AB WO 200191814 A UPAB: 20020329

NOVELTY - A novel biopolymer (A) comprises a 3-dimensionally crosslinked mixture of ubiquitin (I) (a small protein having a sequence of 76 amino acids given in the specification) and at least one crosslinking agent (II).

DETAILED DESCRIPTION -- INDEPENDENT CLAIMS are included for:

(i) preparation of (A);

- (ii) a biopolymer comprising (I), a solvent for (I) and at least one (II); and

(iii) the use of (I) in the preparation of (A).

ACTIVITY - Hemostatic; vulnerary.

MECHANISM OF ACTION - None given in the source material.

USE - (A) form hydrogels or matrices useful as wound dressings, biodegradable vehicles for oral, parenteral or topical drug delivery, enzyme biosensors for detection of nucleic or peptide molecules, in situ hybridization systems (e.g. for use in diagnostic assays), in vitro model systems for research, hemostatic agents, prostheses or implants (possibly containing cell cultures).

ADVANTAGE - (A) are biodegraded to non-toxic, endogenous materials; have good blood compatibility and low immunogenicity and can be prepared with a wide range of controllable properties (e.g. hydrophilicity, charge, degree of crosslinking, drug uptake and degradation/release kinetics).

Dwg.0/18

TECH UPTX: 20020829

TECHNOLOGY FOCUS - POLYMERS - Preferred Ubiquitins: (I) contains at least one ubiquitin unit or ubiquitin units in tandem, preferably 2-25 (especially 7) ubiquitin units. The ubiquitins may be recombinant or naturally occurring ubiquitins, or their mutants, analogs, fragments or derivatives.

Preferred Crosslinking Agents: (II) is a **photoreactive** or thermoreactive crosslinking agent specifically containing carboxy (or **derivative**, e.g. ester, halide, azide or hydrazide), sulfonic acid **derivative**, semicarbamide, thiousemicarbazide, aldehyde, ketone, alcohol, chloride, bromide, iodide, thio, primary, secondary or tertiary amine, hydrazide, epoxide or maleimide reactive groups. Preferably (II) is selected from polyethylene glycols or their **derivatives** (most preferred), polyamines, amines, polyvinyl compounds, polystyrene, epoxy compounds, silicones, proteins (specifically keratin, collagen, elastin,

[illegible]

glutaraldehyde or paraformaldehyde) or their **derivatives**, In particular (II) is a polyethylene glycol **derivative** of formula  $X-(CH_2CH_2O)_n-X$  (II'), especially an activated bifunctionalized polyethylene oxide.

$n =$  at least 1;

$X =$  covalent bond, group capable of reacting with an amino acid, R or OR (with the O bonded to the polyethylene oxide); and

R = methylene, ethylene, propylene, phenylene or phenylene carbamate (optionally substituted by at least one alkyl, aryl, halo, NO<sub>2</sub>, oxo, COOH, OH, thio, sulfonate or phosphate groups).

Preparation: Claimed preparation of (A) involves mixing a solution of (I) with at least one (II) and inducing polymerization for sufficient time to cause crosslinking.

L20 ANSWER 7 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 2002-424859 [45] WPIDS

CR 1997-350664 [32]; 1999-180053 [15]; 2000-374511 [32]; 2001-158209 [16]; 2001-366833 [38]

DNC C2002-120307

TI Crosslinked polymer composition useful as a bioadhesive comprises a first synthetic polymer having nucleophilic groups covalently bound to a second synthetic polymer having electrophilic groups, to form three-dimensional matrix.

DC **A96** B04 B07 **D22**

IN BERG, R A; DELUSTRO, F A; RHEE, W M

PA (BERG-I) BERG R A; (DELU-I) DELUSTRO F A; (RHEE-I) RHEE W M; (COHE-N) COHESION TECHNOLOGIES INC

CYC 1

PI US 2002013408 A1 20020131 (200245)\* 35p  
US 6534591 B2 20030318 (200322)

ADT US 2002013408 A1 CIP of US 1995-573799 19951218, Cont of US 1996-769806 19961218, Cont of US 1999-229851 19990113, Cont of US 1999-302852 19990430, Cont of US 2000-733739 20001208, US 2001-932536 20010817; US 6534591 B2 CIP of US 1995-573799 19951218, Cont of US 1996-769806 19961218, Cont of US 1999-229851 19990113, Cont of US 1999-302852 19990430, Cont of US 2000-733739 20001208, US 2001-932536 20010817

FDT US 2002013408 A1 Cont of US 5874500, Cont of US 6051648, Cont of US 6166139; US 6534591 B2 Cont of US 5874500, Cont of US 6051648, Cont of US 6166139, Cont of US 6423278

PRAI US 1996-769806 19961218; US 1995-573799 19951218; US 1999-229851 19990113; US 1999-302852 19990430; US 2000-733739 20001208; US 2001-932536 20010817

AB US 2002013408 A UPAB: 20030402

NOVELTY - A composition comprises a first synthetic polymer (P1) having nucleophilic groups and a second synthetic polymer (P2) having electrophilic groups. The nucleophilic and the electrophilic groups form covalent bonds between (P1) and (P2), which results in the formation of a three-dimensional matrix.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

1. A composition comprising:

(a) contacting the first surface with the second surface to effect adhesion between the surfaces;

mammalian subject involving:

- (a) administering (P1) and (P2) simultaneously to the tissue, and
- (b) allowing (P1) and (P2) to crosslink in situ;
- (3) preventing the adhesion of a first tissue and a second tissue

involving:

- (a) carrying out step (1a);
- (b) applying the mixture to the first tissue before crosslinking has occurred; and

- (c) carrying out step (2b);
- (4) coating a surface of a synthetic implant involving:

- (a) carrying out step (1a);
- (b) applying the mixture to a surface of the implant, and
- (c) allowing (P1) and (P2) to crosslink with each other on the

surface of implant;

(5) preparing a negatively or positively charged compound-containing matrix useful for the delivery of a negatively or positively charged compound to a mammalian subject, respectively involving:

(a) carrying out step (1a) in which (P1) or (P2) is present in the mixture in molar excess compared to (P2) or (P1);

(b) allowing (P1) and (P2) to crosslink to form the positively or negatively charged crosslinked synthetic polymer matrix, and

(c) reacting the positively or negatively charged matrix with the negatively or positively charged compound, respectively; and

(6) making a synthetic lenticule involving:

(a) carrying out step (1a);

(b) placing the mixture into a lenticular shaped mold or onto a surface of an eye; and

(c) crosslinking (P1) and (P2) to form a clear lenticule.

USE - For coating surfaces of synthetic implants e.g. artificial blood vessels, artificial heart valves, surgical membranes, surgical meshes, breast implants, lenticules, vascular grafts, and vascular stent/graft combinations; for effecting nonsurgical attachment of surfaces; for introduction into a hard or soft mammalian tissue; for preventing tissue adhesion and tissue and surgical adhesion; for preparing positively and negatively charged compound-containing matrix useful for delivering the charged compounds to a mammalian subject; and for preparation of a synthetic lenticule (all claimed), e.g. is useful as a bioadhesive, for augmenting soft tissues (e.g. urinary, anal and esophageal sphincters, in the treatment of scars and rhytids) and hard tissues (e.g. in repair and replacement of bone and/or cartilaginous tissue, and as replacement material for synovial fluid in osteoarthritic joints, nucleus pulposus of a damaged intervertebral disk and vitreous) within the body of a mammalian subject; as a localized drug delivery matrix for delivering various types of drugs, other biologically active agents (e.g. growth factors, enzymes, hormones, antibiotics), living cells (e.g. mesenchymal stem cells including osteoblasts, chondrocytes, fibroblasts; neuroectodermal cell and epithelial cells) and genes (e.g. genetic material from natural sources, synthetic nucleic acids, DNA, anti-sense-DNA and RNA), to a desired site of administration; for blocking

radiation, e.g. to protect the intestinal tract from a patient source of radiation to the pelvis; and as a sealant to coat the interior surface of the physiological lumen (e.g. blood vessel, fallopian tube, etc.)

medical

as balloon catheterization, removal of endometrial tissue.

**ADVANTAGE** - The composition is optically clear and is biocompatible i.e. leaves no toxic, potentially inflammatory or immunogenic reaction products at the tissue site of administration. Hence does not require a skin test prior to beginning treatment as compared to the prior art compositions. The composition has a high compression strength and high swellability and elasticity and has an unusually high tackiness. The composition is not subject to enzymatic cleavage by matrix metalloproteinases and is therefore not readily degradable in vivo, thus exhibits a greater long-term persistence in vivo compared to prior art collagen compositions. The manufacturing of the composition can be highly controlled rendering more consistent quality of products. The composition is not easily degraded in vivo, hence cells and genes entrapped within the composition is isolated from the patient's own cells and as such do not provoke immune response in the patient. Further the potential for restenosis due to the degradation of the coating is also minimized, which is made possible by the composition having a net neutral charge. The composition reduces joint pain and improves joint function by restoring a soft hydrogel network in the joint.

Dwg. 0/0

TECH

UPTX: 20020717

**TECHNOLOGY FOCUS - POLYMERS** - Preferred Components: (P1) contains m nucleophilic groups (preferably amino or thiol, especially amino group) and is selected from either:

(a) a synthetic polypeptide that contains at least two nucleophilic groups selected from a primary amino group (preferably lysine, especially poly(lysine)) or a thiol group (preferably cysteine); or preferably

(b) a polyethylene glycol (PEG) that is modified to contain at least two nucleophilic groups selected from a primary amino group or a thiol group.

(P2) contains n electrophilic groups (preferably succinimidyl or succidyl, especially succinimidyl groups) and is selected from either

(a) a synthetic hydrophilic polymer (preferably PEG **derivative**) containing at least two electrophilic groups (preferably succinimidyl groups); or preferably

(b) a synthetic hydrophobic polymer which is chemically **derivatized** to contain at least two succinimidyl groups and is selected from disuccinimidyl suberate, bis(sulfosuccinimidyl) suberate, dithiobis (succinimidylpropionate), bis(2-succinimidoxy-carbonyloxy) ethyl sulfone, or 3,3'-dithiobis (sulfosuccinimidylpropionate) or their analogs or **derivatives**; or a polyacid selected from trimethylolpropane-based tricarboxylic acid, di(trimethylol propane)-based tetracarboxylic acid, heptanedioic acid, heptanedioic acid, octanedioic acid or hexadecanedioic acid.

The first synthetic polymer has m nucleophilic groups, and the second synthetic polymer has n nucleophilic groups.

m, n = at least 2 (preferably at least 3);

m+n = at least 5

When m is at least 3, n is 2, and when n is at least 3, m is 2. The composition further comprises a naturally occurring polysaccharide (preferably **glycosaminoglycan** selected from hyaluronic acid,

**derivative**;

**TECHNOLOGY FOCUS - POLYMERS** - Preferred Components: The negatively charged compound is succinylated collagen or glycosaminoglycan derivative

hyaluronate, keratan sulfate, keratosulfate, sodium chondroitin sulfate A, B and C, **heparin**, esterified chondroitin sulfate C and/or esterified **heparin**. The positively charged compound is methylated collagen or **glycosaminoglycan derivative** selected from esterified **deacetylated** hyaluronic acid, esterified **deacetylated** desulfated chondroitin sulfate A and C, **deacetylated** desulfated keratan sulfate, **deacetylated** desulfated keratosulfate, esterified desulfated **heparin** and/or **chitosan**.

Preferred Method: The introduction of the composition into the tissue, (P1) and (P2) are contained within separate barrels of and administered from a dual compartment syringe and the method further involves an additional step of forming a mixture by mixing (P1) and (P2) before administration; and administering the mixture within 60 seconds of mixing. The preparation of synthetic lenticule further includes the naturally occurring protein.

TECHNOLOGY FOCUS - BIOLOGY - Preferred Method: In step (1c), either one of the first and the second surfaces is a native tissue surface and the other of the first and the second surfaces is a non-native tissue surface or a surface of a synthetic implant, or both the first and the second surfaces are native tissue surfaces.

L20 ANSWER 8 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 2001-536205 [59] WPIDS

DNN N2001-398300 DNC C2001-159528

TI Material comprising branched polymer supporting a biomimetic material, is useful for coating **medical** devices and for delivery of pharmaceutically active agents.

DC **A96** B04 B05 B07 **D22** P34

IN EVAGOROU, E; MALIK, N

PA (EVAG-I) EVAGOROU E; (MALI-I) MALIK N

CYC 94

PI WO 2001041827 A1 20010614 (200159)\* EN 42p

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
NL OA PT SD SE SL SZ TR TZ UG ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM  
DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC  
LK LE LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE  
SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW

AU 2001011904 A 20010618 (200161)

ADT WO 2001041827 A1 WO 2000-GE4685 20001207; AU 2001021904 A AU 2001-21904 20011207

FDT AU 2001021904 A Based on WO 200141827

PRAI GB 1999-28956 19991207

AB WO 200141827 A UPAB: 20011012

NOVELTY - An internally supported biomimetic material or coating comprises a branched polymer supporting a biomimetic material.

DETAILED DESCRIPTION - A material comprises a combination of a biomimetic material and a substance adapted to allow the biomimetic

**medical** devices and/or tools including the material; and

(b) **medical** devices or tools including the material; and

is associated with the substance in a reaction conducted in an aqueous solution and/or a solvent.

USE - The material may be used to coat or interact with a **medical** device, e.g. an ocular or intraocular lens, a stent, an artificial organ, prosthetic device, pacemaker leads, artificial heart valves, vascular grafts, a limb, glaucoma drainage device, dialysis or ultra-filtration membrane, thoracic drain catheter, vascular graft, urological catheter or device, guidewire, introducer sheath, extracorporeal circuit component, arterial filter, heat exchanger, or a hypodermic syringe needle; or for delivery of a pharmaceutically active agent (claimed). The material may also be used in industrial or agrochemical processes.

Dwg.0/1

TECH

UPTX: 20011012

TECHNOLOGY FOCUS - POLYMERS - Preferred Substances: The substance adapted to allow the biomimetic material to adopt the appropriate structural orientation is a branched polymer, and is a dendrimer, an arborol, cascade polymer, tubular polymer, star polymer, hyperbranched polymer, or a hyper comb-branched polymer. The branched polymer may be crosslinked before combination with the biomimetic, or the branched polymer/biomimetic material combination is crosslinked.

Preferred Biomimetic Material: The biomimetic material is phosphorylcholine, a **polysaccharide** (e.g. cellulose, starch, **maltose**, dextrose, dextran, an algin or alginate), a **mucopolysaccharide** (e.g. **chitin** or **chitosan**) or a **glycosaminoglycan** (hyaluronic acid, chondroitin, dermatan, keratin or **heparin**, or their sulfates), sialic acid or leccin, or their **derivatives** or analogs, e.g. ceramide.

Preferred Material: The material may be in the form of a hydrogel. The molecular weight of the branched polymer is 500 to 1,000,000 Da. A spacer/linker, e.g. peptide or polymer (such as polyethylene glycol), may be introduced between the substance and the biomimetic. The substance and biomimetic material are associated by covalent, Van der Waals, hydrophobic, electrostatic or co-ordinate, neutral, or hydrogen bonding. The material may have at least 1 functional group of the branched polymer exposed, which may be attached to a polymer chain.

L20 ANSWER 9 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 2001-457121 [49] WPIDS

CE 2001-482866 [52]

DNC C2001-138180

TI Preparation of a polysaccharide containing material having at least one desired structural, chemical, physical, electrical and/or mechanical property.

DC A11 A97 D16 F01 F09

IN LEVY, I; NUSSINOVITCH, A; SHOSEYOV, O

PA (CBDT-N) CBD TECHNOLOGIES LTD; (YISS) YISSUM RES DEV CO HEBREW UNIV JERUSALEM; (YISS) YISSUM RES & DEV CO

CYC 95

PI WC 2001034091 A2 20010517 (200149)\* EN 121p

ABSTRACT: A polysaccharide containing material having at least one desired structural, chemical, physical, electrical and/or mechanical property. The material may be in the form of a hydrogel. The molecular weight of the branched polymer is 500 to 1,000,000 Da. A spacer/linker, e.g. peptide or polymer (such as polyethylene glycol), may be introduced between the substance and the biomimetic. The substance and biomimetic material are associated by covalent, Van der Waals, hydrophobic, electrostatic or co-ordinate, neutral, or hydrogen bonding. The material may have at least 1 functional group of the branched polymer exposed, which may be attached to a polymer chain.

R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT  
RO SE SI TR

ADT WO 2001034091 A2 WO 2000-IL708 20001102; AU 2001011729 A AU 2001-11729  
20001102; EP 1230374 A2 EP 2000-973191 20001102; WO 2000-IL708 20001102  
FDT AU 2001011729 A Based on WO 200134091; EP 1230374 A2 Based on WO 200134091  
PFAI US 1999-166389P 19991118; US 1999-164140P 19991108  
AB WO 200134091 A UPAB: 20020924

NOVELTY - Preparation of material containing polysaccharide (I), comprises contacting polysaccharide structures of (I) with a polysaccharide binding domain containing composition before, during and/or after processing the polysaccharide structures into (I). The polysaccharide material has at least one desired structural, chemical, physical, electrical and/or mechanical property.

DETAILED DESCRIPTION - Preparation of (I) comprises contacting polysaccharide structures of (I) with a polysaccharide binding domain containing composition before, during and/or after processing the polysaccharide structures into (I). (I) Has at least one desired structural, chemical, physical, electrical and/or mechanical property.

INDEPENDENT CLAIMS are also included for the following:

(1) a composition comprising the polysaccharide containing material having a polysaccharide binding domain containing composition bound to the polysaccharide structures;

(2) a composition as in (1), in which the polysaccharide binding domain containing composition includes at least two covalently coupled polysaccharide binding domains forming a polysaccharide binding domain coupler crosslinking the polysaccharide structures;

(3) a composition as in (1), in which the polysaccharide binding domain containing composition includes at least one polysaccharide binding domain and a functionalizing group or a hydrophobic group or a hydrophilic group or a (photo)chemical reactive group being covalently coupled thereto;

(4) a composition comprising a polysaccharide binding domain coupler including at least two covalently coupled polysaccharide binding domains;

(5) a nucleic acid construct comprising a polynucleotide encoding a fusion protein including at least two polysaccharide binding domain; and

(6) manufacturing (I) containing at least one desired structural, chemical, physical, electrical and/or mechanical property, comprises contacting polysaccharide structures of (I) with a polysaccharide binding domain during or after processing the structures into (I), and hence covalently coupling at least one group to the binding domain forming (I) having the desired structure, chemical, physical, electrical and/or mechanical property.

USE - The method is used to alter the structural, chemical, physical, electrical and mechanical properties of polysaccharide materials such as paper, yarns, fibers and textiles, using biological crosslinking agents.

ADVANTAGE - The polysaccharide containing materials have improved mechanical properties such as wet strengths, durability and elasticity. The polysaccharide binding domain reagent can be applied in the forming stage in fluting paper manufacture which eliminates the sizing step. Use

of the polysaccharide binding domain reagent improves the mechanical properties of paper products.

Fluted paper.

INT. CL.

TECH

INTX: 09/10831

polysaccharide containing material is selected from paper, textile, yarn and fiber. The polysaccharide binding domain containing composition includes:

- (i) a polysaccharide binding domain; and
- (ii) a group (Z) covalently coupled thereto.

Group Z is selected from at least one additional polysaccharide binding domain, another protein, a hydrophobic group, a hydrophilic group, a biological moiety, an enzyme, a chemical reactive group, a chemical **photoreactive** group, a lipase, a lacase, a protein A-antibody, a peptide, a polypeptide, a hydrocarbon or hydrocarbon **derivative**, a fatty acid **derivative**, an electrically charged group, an ionic group, a silicon binding group, a polymer binding group, a metal, a metallothionein-like protein, ferritin, a metal binding group, a bacterial siderophores, a metallothionein, a thiol group, an aldehyde, a maleimide, a hydrazide, an epoxide, a carbodiimide and a phenylazide.

The polysaccharide binding domain comprises cellulose or starch, or is capable of binding to cellulose, starch or **chitin**, or is a glucan-binding domain or includes streptococcal glucan-binding repeats.

**Preferred Properties:** The structural property is selected from a predetermined level of crosslinks between the polysaccharide structures, a predetermined aggregation of the polysaccharide structures and a predetermined surface texture of the polysaccharide containing material. The chemical property is selected from predetermined hydrophobicity, a predetermined hydrophilicity, a predetermined wet-ability, a predetermined chemical reactivity, a predetermined photochemical reactivity, a predetermined functionality and a predetermined surface tension. The physical property is selected from predetermined Young's modulus, a predetermined strain at maximum load, a predetermined energy to break point, a predetermined water absorbency, a predetermined swellability and a predetermined toughness. The electrical property is selected from a predetermined surface charge and a predetermined electrical conductivity. The mechanical property is selected from a predetermined tensile strength, a predetermined resistance to shear, a predetermined abrasion resistance, a predetermined frictional coefficient, a predetermined elasticity and a predetermined wet strength.

**Preferred Acid:** The nucleic acid further comprises at least one additional polynucleotide encoding at least one linker peptide coupling the at least two polysaccharide binding domains.

L20 ANSWER 10 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 2001-412362 [44] WPIDS

DNN E2001-305026 LNC C2001-125004

TI Microbicide and preservative, comprises salt formed by reacting thiamin **derivative** and specific surfactants and **chitosan derivative** obtained by reacting **chitosan** and **saccharides** having **reducible terminals**.

DC E04 D13 D21 **D22** F34

PA (ICHP) ICHIMARU PHARMCOS INC; (NETE N) NETEKKU KK; (YAES-N) YAESU SUISAN KAGAKU KOGYO KK

CYC 1

**Abstract:** Microbicide and preservative, comprises salt formed by reacting thiamin **derivative** and surfactants or higher alcohol culture esters or alkyl sulfonic acid and/or their salts, and **chitosan derivative** obtained from **chitosan**.

**saccharides having reducible terminals.**

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also claimed for:

- (1) a skin external preparation comprising microbicide and preservative;
- (2) a fiber cleaner; and
- (3) a detergent and deodorizer comprising microbiocidal and preservative.

ACTIVITY - Antibacterial, dermatological.

MECHANISM OF ACTION - None given.

USE - The microbiocide and preservative can be used as a drug, in cosmetics and as a quasi drug, a bath agent, a fiber treating agent e.g. softening agent, bleaching agent, sizing agent and stain removing adjuvant, a detergent for washing, cleaning and deodorizing toilet fixtures, and as preservative for food and beverage products.

ADVANTAGE - The agent has excellent microbiocidal and preservative effect, and is safe to use. The decomposition and contamination of food products can be prevented effectively. The microbicide and preservative was administered orally to DDY type mice at a dose of 2000 mg/kg to evaluate toxic symptoms. The symptoms were observed in time dependent manner and no toxic effects were observed.

Dwg.0/0

TECH

UPTX: 20010809

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Components: The thiamin derivative is thiamine hydrochloride, thiamine sulfate, thiamine nitrate, thiamine monophosphate, o-benzoyl thiamine disulfide, butyryl thiamine disulfide or thiamine tetrahydro furfuryl disulfide. The saccharides having **reducible terminals** is aldose, ketose, glucose, galactose, amino sugars such as glucose amine, **maltose**, **lactose** or dextran (disclosed).

L20 ANSWER 11 OF 26 WPIDS (C) 2003 THOMSON DERWENT  
AN 2001-366833 [38] WPIDS  
CR 1997-350664 [32]; 1999-180053 [15]; 2000-374511 [32]; 2001-158209 [16];  
2002-424869 [45]  
DNC C2001-112415  
TI Polymer composition useful as bioadhesives, comprises a first synthetic polymer with nucleophilic groups, and a second synthetic polymer with electrophilic groups.  
DC **A96 B07 D22**  
IN BERG, E A; DELUSTRO, F A; RHEE, W M  
PA (BERG-E) BERG E A; (DELU-I) DELUSTRO F A; (RHEE-I) RHEE W M; (COHE-N) COHESION TECHNOLOGIES INC  
CYC 1  
PI US 2001003126 A1 20010607 (200138)\* 35p  
US 6323278 B2 20011127 (200175)  
ADT US 2001003126 A1 CIP of US 1995-539799 19951005, Cont of US 1996-769806 19961218, Cont of US 1999-229851 19990113, Cont of US 1999-302852 19990430, US 2000-733739 20001208; US 6323278 B2 CIP of US 1995-573799 19951218, Cont of US 1996-769806 19961218, Cont of US 1999-229851 19990113, Cont of US 1999-302852 19990430, US 2000-733739 20001208

AB

US 6323278 A UPAB: 20011127

NOVELTY - A composition comprising a first synthetic polymer with nucleophilic groups, and a second synthetic polymer with electrophilic groups.

groups. The nucleophilic groups and electrophilic groups are capable of reacting to form covalent bonds between the first synthetic polymer and the second synthetic polymer which results in formation of a three-dimensional matrix.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) a composition comprising a first polyethylene glycol having primary amino groups, and a second polyethylene glycol having succinimidyl groups;

(2) a method for effecting the nonsurgical attachment of a first surface to a second surface, comprising:

(a) providing a first synthetic polymer containing nucleophilic groups and a second synthetic polymer containing electrophilic groups;

(b) mixing the first synthetic polymer and the second synthetic polymer to initiate crosslinking;

(c) applying the mixture to a first surface before substantial crosslinking has occurred; and

(d) contacting the first surface with a second surface to effect adhesion between the first surface and the second surface;

(3) a method for introducing a crosslinked synthetic polymer composition into a tissue within a body of a mammalian subject, comprising:

(a) providing a first synthetic polymer containing nucleophilic groups and a second synthetic polymer containing electrophilic groups;

(b) administering the first synthetic polymer and the second synthetic polymer simultaneously to the tissue; and

(c) allowing the first synthetic polymer and the second synthetic polymer to crosslink in situ;

(4) a method for preventing the adhesion of a first tissue and a second tissue, comprising:

(a) providing, a first synthetic polymer containing nucleophilic groups and a second synthetic polymer containing electrophilic groups;

(b) forming a mixture by mixing the first synthetic polymer and the second synthetic polymer to initiate crosslinking;

(c) applying the mixture to the first tissue before substantial cross linking has occurred; and

(d) allowing the first synthetic polymer and the second synthetic polymer to continue crosslinking in situ;

(5) a method for coating a surface of a synthetic implant, comprising:

(a) providing a first synthetic polymer containing nucleophilic groups and a second synthetic polymer containing electrophilic groups;

(b) forming, a mixture by mixing the first synthetic polymer and the second synthetic polymer to initiate crosslinking;

(c) applying the mixture to a surface of a synthetic implant; and

(d) allowing the first synthetic polymer and the second synthetic polymer to crosslink with each other on the surface of the synthetic implant;

(6) a method for preparing a negatively charged compound-containing matrix useful for delivery of a negatively charged compound to a mammalian subject, comprising:

(a) providing a first synthetic polymer containing nucleophilic groups and a second synthetic polymer containing electrophilic groups;

(b) allowing the first synthetic polymer and the second synthetic

synthetic polymer matrix; and

(d) reacting the matrix with the negatively charged compound; and

(7) a method for preparing a positively charged compound-containing matrix useful for delivery of a positively charged compound to a mammalian subject, comprising:

(a) providing a first synthetic polymer containing nucleophilic groups and a second synthetic polymer containing electrophilic groups;

(b) forming a mixture by mixing the first synthetic polymer and the second synthetic polymer to initiate crosslinking, where the second synthetic polymer is present in the mixture in molar excess compared to the second synthetic polymer;

(c) allowing the first synthetic polymer and the second synthetic polymer to continue cross linking to form a negatively charged crosslinked synthetic polymer matrix; and

(d) reacting the matrix with the positively charged compound; and

(8) a method for making a synthetic lenticule, comprising:

(a) providing a first synthetic polymer containing nucleophilic groups and a second synthetic polymer containing electrophilic groups;

(b) forming a mixture by mixing the first synthetic polymer and the second synthetic polymer to initiate crosslinking;

(c) placing the mixture into a lenticular shaped mold or onto a surface of an eye; and

(d) allowing the first synthetic polymer and the second synthetic polymer to continue crosslinking to form a clear lenticule.

USE - Crosslinked polymer compositions useful as bioadhesives, for tissue augmentation, in the prevention of surgical adhesions, and for coating surfaces of synthetic implants, as drug delivery matrices and for ophthalmic applications.

ADVANTAGE - The polymer compositions has high compression strength and high swellability, are non-immunogenic and have long-term persistence in vivo.

Dwg.0/18

TECH

UPTX: 20010711

TECHNOLOGY FOCUS - POLYMERS - Preferred Composition: The first synthetic polymer has m nucleophilic groups, and the second synthetic polymer has n nucleophilic groups, where m and n are each greater than or equal to 2, and where m + n is greater than or equal to 5, preferably m is greater than or equal to two, and n = 2, more preferably m = 2, and n is greater than or equal to two, especially m and n are each greater than or equal to 3.

The first synthetic polymer is a synthetic polypeptide that contains two or more nucleophilic groups selected from a primary amino group and a thiol group, preferably contains two or more lysine residues, more preferably contains two or more cysteine residues. The first synthetic polymer is a polyethylene glycol that has been modified to contain two or more nucleophilic groups selected from a primary amino group and a thiol group.

The second synthetic polymer is a synthetic hydrophilic polymer containing two or more electrophilic groups, preferably succinimidyl groups.

The second synthetic polymer is a synthetic hydrophobic polymer containing two or more electrophilic groups, preferably succinimidyl groups.

and derivatives. The hydrophobic polymer is a polyacid selected from trimethylolpropanebased tricarboxylic acid, di(trimethylol

and hexadecanedioic acid.

The composition further comprising a polysaccharide or a protein, where polysaccharide is a **glycosaminoglycan** (selected from hyaluronic, **chitin**, chondroitin sulfate A, B, or C, keratosulfate, **heparin** or their **derivatives**) and the protein is collagen or a **derivative**. The negatively charged compound is succinylated collagen.

Preferred Method: In method (2) one of the first surface and second surfaces comprise native tissue, non-native tissue or synthetic implant. In method (3) the tissue is soft tissue, preferably hard tissue. The first synthetic polymer and the second synthetic polymer are contained within separate barrels of and administered from a dual compartment syringe. The method (3) comprising the additional step of forming a mixture by mixing the first synthetic polymer and the second synthetic polymer before administration, where the mixture is administered within 60 seconds of mixing. In method (5) the synthetic implant is selected from artificial blood vessels, artificial heart valves, vascular grafts and/or vascular stent, surgical membranes, surgical meshes, or breast implants. The mixture has a net neutral charge. Method (8) further comprises a collagen protein.

L20 ANSWER 12 OF 26 WPIDS (C) 2003 THOMSON DERWENT  
 AN 2001-308366 [32] WPIDS  
 DNC C2001-095258  
 TI Sustained release microspheres for administrating drugs, comprises a carrier protein, a water soluble polymer, a polyanionic polysaccharide and divalent calcium or magnesium.  
 DC A96 B04  
 IN BLIZZARD, C D; BROWN, L R; RASHBA-STEP, J; RISKE, F J; SCOTT, T L  
 PA (EPIC-N) EPIC THERAPEUTICS INC; (BLIZ-I) BLIZZARD C D; (BROW-I) BROWN L R; (RASH-I) RASHBA-STEP J; (RISK-I) RISKE F J; (SCOT-I) SCOTT T L  
 CYC 95  
 PI WO 2001028524 A1 20010426 (200132)\* EN 71p  
 RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
 NL OA PT SD SE SL SZ TZ UG ZW  
 W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM  
 DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC  
 LK LR LS LT LU LV MA MD MG MK MN MW MX ME NO NZ PL PT FO RU SD SE  
 SG SI SK SL TJ TM TR TT TH UA UG US UZ VH YU ZA ZW  
 AU 2001011980 A 20010430 (200148)  
 EP 1223917 A1 20020724 (200256) EN  
 R: AL AT BE CH CY DE DK ES FI FR GE GR IE IT LI LT LU LV MC MK NL PT  
 RO SE SI  
 US 6458387 B1 20021001 (200268)  
 US 2003059474 A1 20030327 (200325)  
 ADT WO 2001028524 A1 WO 2000-US28200 20001012; AU 2001011980 A AU 2001-11980  
 20001012; EP 1223917 A1 EP 2000-973477 20001012, WO 2000-US28200 20001012;  
 US 6458387 B1 US 1999-420361 19991018; US 2003059474 A1 Cont of US  
 1999-420361 19991018, US 2002-245776 20020917  
 FMT AU 2001011980 A Based on WO 2001028524; EP 1223917 A1 Based on WO

1. A water-soluble polymer (I), a first complexing agent (II) comprising a polyanionic polysaccharide, and a second complexing agent (IV) comprising a divalent metal cation comprising calcium or magnesium, are new.

following:

- (1) a syringe containing a single dose of the microspheres, including a needle having a bore size of 14-30 gauge; and
- (2) forming a microsphere comprising:
  - (a) forming an aqueous mixture of (I), (II), (III) and (IV);
  - (b) allowing the microspheres to form in the aqueous mixture; and
  - (c) stabilizing the microspheres, preferably by contacting the microspheres with a crosslinking agent and/or exposing the microspheres to an energy source, preferably heat.

USE - The microspheres are useful for administration of drugs, for a wide variety of separations, diagnostic, therapeutic, industrial, commercial and research purposes e.g. in vivo diagnosis (e.g. where the microspheres can include a macromolecule such as an immunoglobulins or cell receptor labeled with a detectable label). They can be labeled for diagnosis of proliferative disorders such as cancer, or can be used for purification of molecules from complex mixtures, as reagents for detection or quantification of specific molecules or for production of molecules such as antibodies. They can also be used as adjuvants for vaccine production by injection into e.g. mice or rabbits to trigger enhanced immune responses. The microspheres can also be used in cleaning formulations such as enzyme particles for addition to detergents, cosmetics such as the formation of collagen particles to be suspended in a lotion or cream, ink or paint.

ADVANTAGE - Prior art micro particles or beads were difficult and expensive to produce and had a wide size distribution, often lacked uniformity and failed to exhibit long term release kinetics when the concentration of active ingredients was high. The new microspheres are of a dimension which permits the delivery using a needleless syringe, eliminating disposal problems inherent to needles which must be disposed as biohazard waste products. The microspheres also have qualities suitable for delivery by other parenteral and non-parenteral routes.

Dwg. 0/13

TECH

UPTX: 20010611

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preparation: The aqueous mixture of (2) is preferably prepared by combining (I)-(IV) simultaneously. The method further comprises contacting the microsphere with a solution of an active agent (VI) to be incorporated into the microsphere, preferably to levels of at least 60 %, particularly at least 90, especially at least 98 %. The microspheres are further stabilized again by contacting with a crosslinking agent, Preferred Composition: The microsphere contains 40 to less than 100 % polymer. The microsphere has a smooth surface that includes channel openings of diameter less than 1000 angstroms and does not contain detectable oil or organic solvent. The microsphere further comprises a therapeutic agent (VI).

TECHNOLOGY FOCUS - PHARMACEUTICALS - (VI) comprises hormones, antibiotics, other anti-infectives, hematopoietics, thrombopoietics, antidementia agents, antiviral agents, antitumor agents, chemotherapeutic agents, antipyretics, analgesics, antiinflammatories, Antiulcer agents, antidiabetic agents, antihypertensives, anesthetic agents, and dietetics.

solid, semi-solid, liquid, lyophilized, vitrified, virus particles, conjugates or complexes of small molecules and proteins or their mixtures, or organic or inorganic synthetic pharmaceutical drugs, preferably

leuprolide or leuprolide acetate.

TECHNOLOGY FOCUS - POLYMERS - Preferred Microspheres: (I) comprises an albumin or an immunoglobulins. The protein comprises albumins (preferably human serum albumin), HAS, bovine serum albumin, immunoglobulin (Ig)G, IgM, insulin, human growth hormone (hGH), lysozyme, alpha-lactoglobulin, basic fibroblast growth factor, vascular endothelial growth factor (VEGF), chymotrypsin, trypsin, carbonic anhydrase, ovalbumin, phosphorylase b, alkaline phosphatase, beta-galactosidase, fibrinogen, poly-L-lysine, deoxyribonucleic acid, immunoglobulins (e.g. antibodies), casein, collagen, soy protein or gelatin. (II) comprises a carbohydrate based polymer, such as methyl cellulose, carboxymethylcellulose-based polymers, dextran, polydextrose, **derivatized chitins**, **chitosan** and starch (including hetastarch) and their **derivatives**, polyaliphatic alcohols such as polyethylene oxide or its **derivatives** such as polyethylene glycol (PEG), PEG-acrylates, polyethylene imine, polyvinyl acetate or their **derivatives**, polyvinyl polymers such as polyvinyl alcohol, polyvinylpyrrolidone, polyvinyl phosphate, polyvinylphosphonic acid or their **derivatives**, polyacrylic acids or their **derivatives**, polyorganic acids such as polymaleic acid or their **derivatives**, polyaminoacids such as polylysine and polyamino acids such as polyamino tyrosine or their **derivatives**, co-polymers and block co-polymers such as poloxamer 407 or Pluronic L-101 (RTM) polymer or their **derivatives**, tertiary-polymers or their **derivatives**, polyethers such as poly(tetramethylene ether glycol) or their **derivatives**, naturally occurring polymers such as zein and pullulan or their **derivatives**, polyimids such as polyn-tris(hydroxymethyl)methylmethacrylate or their **derivatives**, surfactants such as polyoxyethylene sorbitan or their **derivatives**, polyesters such as poly(ethylene glycol)(n)monomethyl ether mono(succinimidylsuccinate)ester or their **derivatives**, branched or cyclo polymers such as branched PEG and cyclodextrins or their **derivatives** or polyaldehydes such as poly(perfluoropropylene oxide-b-perfluoroformaldehyde) or its **derivatives**, preferably hydroxyethyl starch, especially a carbohydrate-based polymer, particularly hetastarch. (III) comprises dextran sulfate, galacturonic acids, alginates, mannuronic acid, glucuronic acid, hyaluronic acid, chondroitin sulfates, **heparin**, **chitin**, **chitosan**, **glycosaminoglycans**, proteoglycans, or cationic complexing agents such as complexing agents having a positive charge, preferably dextran sulfate.

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Microsphere: The divalent metal cation comprises calcium or magnesium.

L20 ANSWER 13 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 2001-202642 [20] WPIDS

DNN N2001-144617 DNC C2001-060123

TI Biocompatible coating platform for **medical** devices with e.g.

poly(hydroxyethyl methacrylate)

11 W: AT BE CH CY DE DK EA EP FI FR GB GR HU IE IT JP KR  
 12 BW: AT BE CH CY DE DK EA EP FI FR GB GR HU IE IT JP KR

13

NL OA PT SD SE SL SZ TZ UG ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM  
DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ IC  
LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE  
SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

AU 2000063687 A 20010219 (200129)

US 6309660 B1 20011030 (200172)

ALT WO 2001008718 A1 WO 2000-US20093 20000724; AU 2000063687 A AU 2000-63687  
20000724; US 6309660 B1 US 1999-362468 19990728

FDT AU 2000063687 A Based on WO 200108718

PFAI US 1999-362468 19990728

AB WO 200108718 A UPAB: 20010410

NOVELTY - Universal, biocompatible coating platform for **medical** articles includes (i) a polyelectrolyte molecular film and (ii) a cross-linked interpenetrating network (IPN) which includes a multifunctional polymer and a cross-linking agent (CA).

DETAILED DESCRIPTION - Universal, biocompatible coating platform for the surface of an article intended to contact physiological fluids or tissues, comprises: (a) a molecular film which has a first water-soluble, biocompatible polymer (P1) ionically bound to a second water-soluble, biocompatible polymer (P2); and (b) a cross-linked, interpenetrating network (IPN) which has (i) at least one multifunctional, biocompatible polymer (P3) and (ii) at least one cross-linking agent (CA), covering the molecular film.

ACTIVITY - Thrombolytic.

MECHANISM OF ACTION - None given.

USE - The coating platforms can be used to coat articles intended for contact with physiological fluids or tissues, e.g. contact lenses, ocular implants, catheters, **medical** tubing, cardiomy reservoirs and heaters, extracorporeal blood circuits, heart valves, stents, pacemaker units, synthetic organs, artificial hips or joint prostheses.

ADVANTAGE - The platforms can be used to coat **medical** devices with heterologous surfaces, e.g. combinations of polymers, metals and glasses. They can be used to bind a variety of different biologically active molecules to the surfaces while retaining the activities of these molecules.

Dwg.0/G

TECH

UPTX: 20010410

TECHNOLOGY FOCUS - PHARMACEUTICALS - Preferred Materials: The platform can also comprise a biocompatible, biologically active molecule ionically bound to the surface of the IPN. This active molecule is especially selected from dextran, dextran salts, cyclodextrins, chondroitin, chondroitin salts, **chitosan**, **chitin derivatives**, dermatan salts, starch, starch **derivatives**, pectin, **glycosaminoglycans**, alginates, agar, gum, fructose, **heparin** and **heparin** salts. Alternatively, the IPN can include at least one biologically active compound. This compound is, e.g., a protease inhibitor, antibacterial agent, antiparasitic agent, antiviral agent, antifungal agent, amoebicidal agents, antihistamine, antigen, anti-inflammatory, chelating agents, anticholinergic agent,

TECHNOLOGY FOCUS - POLYMERS - Preferred Materials: P1 is a polyelectrolyte selected from polyethyleneimine, polyacrylamide, polymers of dimethylaminoethylmethacrylate, and polymers of dimethylaminoethylmethacrylate.

copolymers of dimethylaminoethylmethacrylate and ammonio methacrylate. P2 is a polyanion selected from dextran, dextran salts, cyclodextrans, chondroitin, chondroitin salts, **chitosan, chitin derivatives, dermatan salts, starch, starch derivatives, pectin, glycosaminoglycans, alginates, agar, gum, fructose, heparin and heparin salts.** P3 is a polycation which is selected from those given above for P1. The cross-linking agent is selected from epoxides, isocyanates, aldehydes and carbodiimides, e.g., glycidyl esters, erythritol anhydride, polyglycerol polyglycidyl ether, terephthalic acid diglycidyl ester, toluene diisocyanate, dicyclohexylmethane diisocyanate, dicyclohexylcarbodiimide, formaldehyde or glutaraldehyde. Preparation: The platform can be prepared by a claimed process comprising: (a) applying P1 to the surface of the article; (b) applying P2 to the surface of the article; and (c) applying a mixture of P3 and at least one CA to the surface.

L20 ANSWER 14 OF 26 WPIDS (C) 2003 THOMSON DERWENT  
 AN 2001-041105 [05] WPIDS  
 DNC C2001-011970  
 TI Pharmaceutical composition useful for stimulating epithelial cell proliferation and basal keratinocytes for wound healing comprises keratinocyte growth factor-2, in liquid or lyophilized forms.  
 DC **A96** B04  
 IN CHOPRA, A; GENTZ, R L; KAUSHAL, P; KHAN, F; SPITZNAGEL, T; UNSWORTH, E  
 PA (CHOP-I) CHOPRA A; (GENT-I) GENTZ R L; (HUMA-N) HUMAN GENOME SCI INC; (KAUS-I) KAUSHAL P; (KHAN-I) KHAN F; (SPIT-I) SPITZNAGEL T; (UNSW-I) UNSWORTH E  
 CYC 94  
 PI WO 2000072872 A1 20001207 (200105)\* EN 101p  
 RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
 NL OA PT SD SE SL SZ TZ UG ZW  
 W: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ  
 EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK  
 LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG  
 SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW  
 AU 2000055932 A 20001218 (200118)  
 EP 1196187 A1 20020417 (200233) EN  
 R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT  
 RO SE SI  
 KE 2002010920 A 20021006 (200235)  
 CN 1359299 A 20020717 (200268)  
 JP 2003500456 W 20030107 (200314) 198p  
 ADT WO 2000072872 A1 WO 2000-US15186 20000602; AU 2000055932 A AU 2000-55932  
 20000602; EP 1196187 A1 EP 2000-941186 20000602; WO 2000-US15186 20000602;  
 KR 2002010920 A KR 2001-715493 20011201; CN 1359299 A CN 2000-809802  
 20000602; JP 2003500456 W JP 2000-620480 20000602; WO 2000-US15186  
 20000602  
 FDT AU 2000055932 A Based on WO 2000072872; EP 1196187 A1 Based on WO  
 2000072872; JP 2003500456 W based on WO 2000072872

3. a buffer having a different capacity than water;
4. a diluent to bring the composition to a desired pH range; and
- 4b. a preservative such as methylol, chlorobutanol, or a mixture of

ACTIVITY - Vulnerary; antiinflammatory; antipsoriatic; antidiabetic; ophthalmological; hemostatic. No biological data is given.

MECHANISM OF ACTION - Soft tissue growth or regeneration promoter; keratinocyte cell growth and proliferation stimulator.

USE - Used for promoting or accelerating soft tissue growth, for wound healing or treating mucocytis or inflammatory bowel disease. The KGF-2 polypeptides stimulate keratinocyte cell growth and proliferation and (I) is used to stimulate epithelial cell proliferation and basal keratinocytes for wound healing and to stimulate hair follicle production and healing of dermal wounds. These wounds may be of superficial nature or may be deep and involve damage of the dermis and the epidermis of skin. (I) Also promotes the healing of anastomotic and other wounds caused by surgical procedures in individuals which both heal wounds at a normal rate and are healing impaired. (I) may also be used to stimulate differentiation of cells, for example muscle cells, nervous tissue, prostate cells and lung cells.

(I) Is clinically useful in stimulating wound healing of wounds including surgical wounds, excisional wounds, deep wounds involving damage of the dermis and epidermis, eye tissue wounds, dental tissue wounds, oral cavity wounds, diabetic ulcers, dermal ulcers, cubitus ulcers, arterial ulcers, venous stasis ulcers, and burns resulting from heat exposure to extreme temperatures of heat or cold, or exposure to chemicals. (I) is useful for promoting the healing of wounds associated with ischemia and ischemic injury, e.g. chronic venous leg ulcers caused by an impairment of venous circulatory system return and/or insufficiency etc. The KGF-2 polypeptides in the formulation are used to stimulate epithelial cell proliferation and basal keratinocytes for the purposes of treating burns and skin defects such as psoriasis and epidermolysis bullosa, to increase the adherence of skin grafts to a wound bed and to stimulate re-epithelialization from the wound bed to reduce the side effects of gut toxicity that result from radiation, chemotherapy treatments or viral infections and to treat diseases and conditions of the liver, lung, kidney.

KGF-2 can be used to treat inflammatory bowel diseases, diabetes, thrombocytopenia, hypofibrinogenemia, hypoalbuminemia, hemorrhagic cystitis, xerostomia, keratoconjunctivitis sicca. KGF-2 can also be used to stimulate the epithelial cells of the salivary glands, lacrimal glands and stimulating the epithelial cells of the salivary glands, lacrimal glands and stimulating re-epithelialization of the sinuses and the growth of nasal mucosa.

ADVANTAGE - The composition is stable over prolonged periods of storage, has increased pharmacological activity or effectiveness of the polypeptide and/or allow facile application or administration of the polypeptide in therapeutic regimens.

Dwg.0/5

TECH

UPTX: 20010124

TECHNOLOGY FOCUS - PHARMACEUTICALS - Preferred Composition: (I) Also comprises a chelating agent such as EDTA and a tonicifier such as NaCl, glycine, sucrose and/or mannitol, in concentrations of 0-10 (preferably 1) mM and 0-150 mM (preferably 125) respectively. (I) Also comprises 0-5

lyophilized, 0-5 mM sucrose and water. (I) is a solid composition, lyophilized, and has a pH of 6.0.

Alternatively, (I) comprises 1 mg KGF-2, 5 mM sucrose, 20 mM sodium citrate,

diluent in (I). The pH of (I) is from 5.5-6.5 (preferably 6). The buffer is a phosphonic, acetic, aconitic, citric, glutaric, malic or succinic carbonic acid, or an alkali or alkaline earth salt of the acids, present in concentrations of 5-30 mM. Preferably the buffer is a citrate salt present in a concentration of 10-20 mM. (I) comprises a stabilizing amount of an antioxidant or thiol compound. The composition is maintained at a temperature at or below -20degreesC.

(I) Also comprises a bulking agent such as sucrose, glycine, mannitol and/or trehalose. Preferably, the bulking agent is sucrose or a mixture of sucrose and glucose is present in concentrations of 2-10% w/v. (I) comprises 7% sucrose, 5% mannitol, 8% trehalose or 2% glycine and 0.5% sucrose. The pH of (I) comprising the bulking agent is 6.2 and in which 90% of diluent water is removed by lyophilization and is reconstituted with an amount of sterile water containing an antioxidant comprising 0.01-2% w/v monothioglycerol, 0.01-2% w/v ascorbic acid and/or 0.01-2% w/v methionine, effective to maintain isotonic conditions of 290 mOsm. Buffer is added to this composition in concentrations of 5-50 mM. Preferably, citrate is added at a concentration of 10 mM.

The composition also comprises a thickening agent and a gelling agent to raise the viscosity. (I) Also comprises a thickening agent in a concentration of 0-5% w/v, to increase the viscosity to 50-10000 (preferably 200-300) cps. The thickening agent is a water soluble etherified cellulose such as alkyl cellulose, hydroxyalkyl cellulose, carboxyalkyl cellulose or alkylhydroxyalkyl cellulose (preferably methylcellulose, hydroxyethyl cellulose, hydroxy propyl cellulose, hydroxy propyl methyl cellulose, or carboxymethyl cellulose), or a high molecular weight polymer of acrylic acid crosslinked with allylsucrose or an allyl ether of pentaerythritol. The etherified cellulose as a molecular weight of 50000-700000 (preferably 80000-240000) and is present in a concentration of 0-20 (preferably 2-8) wt.%. In this case citrate is added at a concentration of 10-20 mM and sucrose is added at a concentration of 0.1-5% and the thickening agent is added directly to the liquid formulation and thereafter lyophilized.

Alternatively, the thickening agent is added to a lyophilized formulation by reconstituting the formulation by adding a diluent having a thickening agent dissolved in it.

(I) Also comprises a gelling agent to increase the viscosity to 0.1-10000 cps at room temperature.

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred KGF: The KGF-2 polypeptide, preferably KGF-2 DELTA 33 with and/or without a N terminal methionine, is present in concentrations of 0.5-30 (preferably 0.2-4) mg/ml (w/v) or 0.1-10 mg/ml. Alternatively, the KGF-2 polypeptide comprises N-terminal deletions of Ala (63)--Ser(208) (KGF-2DELTA28) and Ser (69)--Ser (208) (KGF-2DELTA33).

The KGF-2 polypeptide preferably is a N-terminal or C-terminal deletion mutant comprising Ala (39)--Ser (208); Pro (47)--Ser (208); Val (77)--Ser (208); Glu (93)--Ser (208); Glu (104)--Ser (208); Val (123)--Ser (208); Gly (138)--Ser (208); Met (1) Thr (36) or Cys (37)--Lys (153). (I) Also

Alternatively, it is a high molecular weight polymer such as vinyl polymer, polyoxyethylene polyoxypropylene (preferably block copolymer), polysaccharide, protein, poly(ethylene oxide), acrylamide

polymer is polyacrylic acid, polymethacrylic acid, polyvinyl pyrrolidone, polyvinyl alcohol, or their salts and ester. The polysaccharide is a cellulose derivative, a glycosaminoglycan (hyaluronic acid, chondroitin, chondroitin-4-sulfate, heparan sulfate, heparin or their salts and esters), agar, pectin, alginic acid, dextran, alpha-amylose, amylopectin, chitosan, or salts esters of the above mentioned compounds. The glycosaminoglycan is present in combination with collagen, gelatin or fibronectin. 10-50 (preferably 18%) weight% of polyoxyethylene-polyoxypropylene block copolymer having a molecular weight of 500-50000 (preferably 1000-15000) is present in the composition.

L20 ANSWER 15 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 2000-465985 [40] WPIDS

DNN N2000-347797 DNC C2000-140380

TI Non-viral nucleic acid delivery complex for delivering a nucleic acid molecule into a cell comprises a modular polypeptide.

DC B04 D16 S03

IN HEINTZ, N H; HOUCHENS, C R

PA (UYVE-N) UNIV VERMONT & STATE AGRIC COLLEGE

CYC 21

PI WO 2000040723 A2 20000713 (200040)\* EN 115p

RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

W: AU CA JP

AU 2000024059 A 20000724 (200052)

ADT WO 2000040723 A2 WO 2000-US212 20000104; AU 2000024059 A AU 2000-24059 20000104

FIT AU 2000024059 A Based on WO 200040723

PRAI US 1999-114745P 19990104; US 1999-114743P 19990104

AB WO 200040723 A UPAB: 20000823

NOVELTY - Non-viral nucleic acid delivery complex (I) comprising a modular polypeptide, is new.

DETAILED DESCRIPTION - A non-viral nucleic acid delivery complex (I) comprises a modular peptide containing a nucleic acid binding domain and a nucleic acid condensation domain that bind with and condense a nucleic acid molecule of more than 50 kilobases in length. (I) also comprises one or more polypeptides selected from the group of; a cell recognition domain, a protein transduction domain, a protein degradation domain, an intracellular targeting domain, a protein interaction domain, an epitope domain and a protein purification domain.

INDEPENDENT CLAIMS are also included for the following:

(1) a method of delivering to a cell a non-viral nucleic acid encoding one or more polypeptides comprising delivering to the cell in a nucleic acid delivery complex a non-viral nucleic acid (II) comprising 2 or more native regulatory and structural nucleic acid elements for at least one of the following encoded polypeptides: locus control regions, 5' and 3' flanking sequences, introns, promoters, enhancers or encoding sequences;

(2) an isolated nucleic acid molecule (III) comprising:

(a) nucleic acid molecules which hybridize under stringent conditions

with a nucleic acid molecule, or a polypeptide with 100% identity;

or nucleic acid molecules that differ from the nucleic acid molecule of (a) or (b) by one or more nucleotide substitutions, deletions or insertions.

genetic code; and

- (d) complements of (a), (b) or (c);
- (3) an isolated nucleic acid molecule (VIII) which is:
  - (a) a unique fragment of (IV) which includes a sequence of contiguous nucleotides not identical to any sequence with the database accession numbers given in the table in the specification, or their complements or fragments; and
  - (b) complements of (a);
- (4) an expression vector comprising (III) or (VIII) operably linked to a promoter;
- (5) a host cell transformed or transfected with the expression vector of (4);
- (6) an isolated polypeptide (IX) encoded by (III) which has RIP60 activity;
- (7) an isolated peptide (X) comprising a fragment of (IX) of sufficient length to represent a sequence unique within the human genome and identify a peptide with RIP60 activity;
- (8) a composition comprising an isolated agent that binds selectively to a polypeptide comprising RIP60 sequences (XI) 567 amino acids (aa), (XII) 126 aa, (XIII) 59 aa and (XIV) 147 aa or a fragment of (XI), (XII), (XIII) or (XIV); and
- (9) a method for determining a level of RIP60 expression in a sample comprising measuring a test level of RIP60 expression in a test sample and comparing the test level of RIP60 expression to a control.

USE - (I) is used to deliver a nucleic acid to a cell (claimed). The nucleic acids delivered are of various sizes and preferably greater than 50 kilobases, especially more than 100 or more than 200 kilobases in length (claimed).

Dwg. 0/6

TECH

UPTX: 20000823

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Complex: The modular peptide of (I) comprises two or more and preferably all the polypeptide domains from the group. The modular polypeptide is complexed with a nucleic acid. The nucleic acid binding domain recognizes and binds a nucleic acid in a sequence independent manner by interacting with an ATT-rich sequence of nucleic acid. The nucleic acid binding domain is a zinc finger domain, basic helix-loop-helix domain, homeodomain or a native or modified antibody or antibody fragment. The nucleic acid binding domain and the nucleic acid condensation domain are the X2 domain of the human zinc finger protein R1P60.

The nucleic acid is an antisense nucleic acid, DNA molecule, RNA molecule, DNA/RNA hybrid molecule, unmodified fragment of chromosomal DNA, a bacterial artificial chromosome (BAC), yeast artificial chromosome (YAC), single stranded or double stranded.

The nucleic acid condensation domain is a multimerization domain, a zinc finger domain, homeodomain, paired **amphipathic** helices domain or a proline-rich domain. The proline-rich domain is the proline rich region of a human zinc finger protein RFP60. The nucleic acid condensation domain comprises a phosphorylation site.

The cell recognition domain binds to a cell surface receptor.

The protein interaction domain associates with a signal transduction molecule, a carbohydrate-expressing polypeptide, a hormone, a hormone receptor, a cell surface receptor, or a cell surface receptor ligand.

proline rich domain, preferably the proline rich region of a human zinc finger protein RIP60.

The epitope domain is a hemagglutinin tag, a FLAG tag, a V5 tag, a myc tag or a T7 tag.

The protein purification domain is a glutathione-S-transferase (GST) sequence tag, a hexahistidine tag, a polyhistidine tag, a Protein A tag, a biotin tag, a **chitin** tag or a maltose binding tag.

Preferred Nucleic Acid: (II) contains 3, 4, 5, 6 or more native regulatory and structural nucleic acid elements and is 50 or more kilobases long.

(II) is delivered to the cell using (I).

(VIII) is at least 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 50, 75, 100 or 200 nucleotides long and encodes a peptide of a fragment of the RIP60 polypeptide of 567 aa.

Preferred Cell: The cell is a eukaryotic cell, an animal cell, a human cell, an insect cell, a plant cell, a mouse cell, a Drosophila cell or a prokaryotic cell. The cell is in a suspension, a tissue or tissue fragment, an organ or organ fragment in vitro or in vivo. The cell is **derived** from a subject with one or more genetic mutations. The nucleic acid is delivered to the cell by passive or active transport.

Preferred Polypeptide: (IX) has the defined RIP60 sequence of 567 aa or the sequence of 126 aa, 59 aa or 147 aa given in the specification.

Preferred Peptide: (X) is immunogenic and comprises 6, 8, 9, 10, 11, 12, 14, 16, 18 or 20 contiguous aa of (IX).

Preferred Composition: The isolated agent is a peptide, an antibody (humanized or chimeric) or antibody fragment. The isolated agent is conjugated to a detectable label which is a radioactive label, an enzyme, a biotin molecule, an avidin molecule or a fluorochrome.

Preferred Detection: The RIP60 expression is mRNA expression measured by polymerase chain reaction or Northern blotting or RIP60 polypeptide expression measured using monoclonal or polyclonal antisera to RIP60.

L20 ANSWER 16 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 2000-376501 [32] WPIDS

DNC C2000-113903

TI New functional **chitosan derivative** containing e.g. saccharide with wound healing and antithrombogenic activity, useful in **health** care products.

DC All **A96** B04 D01 **D22**

IN UCHIHARA, M; ONO, K; SAKI, S; SAITO, Y; YUEA, H

PA (NETE-N) NETECH INC

CYC 24

PI WO 2000027889 A1 20000518 (200032)\* JA 51p

EW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

W: AU CA JP US

AG 2000010786 A 20000529 (200041)

EP 1152013 A1 20011107 (200168) EN

R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

JF 2000581066 X 20020212 (200227)

AI 755683 B 20021219 (200312)

ADT WO 2000027889 A1 WO 1999 JP6197 19991102; AU 2000010786 A AU 2000 10007

NOVELTY - Functional **chitosan derivative** comprises:

- (i) chitan or **chitosan** which has at least one of the amino groups in the glycosamine chain **deacetylated**; and
- (ii) contains a partially reduced saccharide, a **photoreactive** functional group, an **amphipathic** group and/or a **glycosaminoglycan**; and/or the 3 and/or 6 position of the glycosamine or acetyl-glycosamine is replaced by an **amphipathic** group.

ACTIVITY - Vulnerary; Anticoagulant; Thrombolytic.

USE - Functional **chitosan derivative** is soluble in a neutral medium, is self cross-linking, can hold a lot of water and has wound healing and antithrombogenic properties. The **derivative** can thus be used in **health** care materials such as **medical** products and cosmetics.

Dwg.0/7

TECH

UPTX: 20000706

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Materials: At least 40% of the chitan/**chitosan** is **deacetylated**. The chitan/**chitosan** contains 0.1-80 % saccharide (preferably disaccharide) or **photoreactive** functional group (preferably carbonylazido, sulfonylamido or aromatic azido) or 5-70% **amphipathic** group (preferably a non-ionic group, especially polyoxyalkylene alkyl ether). The **glycosaminoglycan** is **heparin**.

L20 ANSWER 17 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 2000-284193 [25] WPIDS

DNC C2000-085898

TI Association of active agent with colloidal polymer, preferably new polymeric branched polyol ester, useful for controlled transmucosal administration of e.g. peptide, DNA construct or vaccine.

DC A96 B04 B07 D16

IN BREITENBACH, A; JUNG, T; KAMM, W; KISSEL, T

PA (BREI-I) BREITENBACH A; (JUNG-I) JUNG T; (KAMM-I) KAMM W; (KISS-I) KISSEL T

CYC 1

PI DE 19839515 A1 20000309 (200025)\* 39p

ADT DE 19839515 A1 DE 1998-19839515 19980829

PFAI DE 1998-19839515 19980829

AB DE 19839515 A UFA: 20000524

NOVELTY - A pharmaceutical composition contains at least one colloidal polymer-active agent association (A).

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for novel polymers (I) which are branched polyol esters consisting of a central molecule (II) to which short-chain, biodegradable hydroxycarboxylic acid ester groups (III) are attached. The reaction parameters (i.e. nature and amount of (II) and catalyst system, nature and length of (III), reaction temperature and reaction time) are selected to optimize (I) for use as the polymer component of (A).

ACTIVITY - Cytostatic; antiinflammatory; antibiotic; vaccine.

MECHANISM OF ACTION - [unclear]

wherein (I) is used as the polymer component of (A) claimed.

ADVANTAGE - Administration in the form of (A) improves the stability, bioavailability, biodistribution, activity and/or resorption of the active agent.

conditions which cause no degradation of unstable active agents. The polymers can be associated with most macromolecular active agents without causing degradation; can provide controlled and targeted release; can be prepared in a small number of steps; are biocompatible, biodegradable and non-toxic to surrounding tissue; have long dwell time on mucosal surfaces to cause enrichment of active agents at mucosal surfaces; may increase cellular uptake; and may induce an immune response when use with an immunizing antigen or DNA construct.

Dwg. 0/22

TECH

UPTX: 20000524

TECHNOLOGY FOCUS - PHARMACEUTICALS - Preferred Composition: The association is a polymer-active agent complex, typically formed spontaneously in situ by combining an aqueous solution containing the polymer with a component containing the active agent (optionally in chemically bonded or physically associated form). Alternatively the polymeric carrier is converted into colloidal form by controlled precipitation, in which case the active agent is adsorbed on the polymer colloid (formed previously or in situ), enclosed in the polymer matrix in situ during particle formation or bonded covalently to at least one functional group on the polymer or the particle surface. The colloidal particle size is less than 1  $\mu$ m, especially 10-10000 nm.

TECHNOLOGY FOCUS - POLYMERS - Preferred Central Molecules: (II) are optionally modified polyols, specifically: (i) linear synthetic polymers containing 7-500 OH groups, especially polyvinyl alcohol having a polymerization degree of 7-500 and a saponification degree of 70-89% or a copolymer of vinyl alcohol with vinyl acetate, -pyrrolidone, -amine, -imidazole, -pyridine, -sulfonic acid or -phosphoric acid; or (ii) linear, branched or cyclic, charged or uncharged polysaccharides, preferably starch (or its components), glycogen, cellulose (or its components), dextran, tunicin, inulin, **chitin**, alginate, pectin, mannan, galactan, xylan, other polyoses, chondroitin sulfate, **heparin**, hyaluronic acid, other **glycosaminoglycans**, murein, dextrin, cyclodextrin, **chitosan** or their partially hydrophobized **derivatives** (preferably methyl or ethyl ethers, esters or urethanes). (II) optionally contain carboxy, sulfobutyl, sulfopropyl, butylamine, propylamine and/or ethylamine groups.

Preferred Side-Chains: (III) are **derived** from D- or L-lactic and/or glycolic acid or from D-, L- or D,L-lactide and/or glycolide.

Preferred Polymers: (I) may prepared using (II) in the form of a halide or alkali metal salt, preferably the sodium or chloride salt. (III) may be introduced to give water-soluble (I) (specifically at polyol OH group to acid repeating unit molar ratio of 0.6-6 : 1 (preferably 1-3 : 1)), in which case (I) preferably shows a minimum critical dissolution temperature in the range 0-100degreesC in aqueous solution. Alternatively (III) may be introduced to give (I) which are insoluble in water but soluble in non-toxic organic solvents (i.e. esters, ethers, alcohols or ketones (especially acetone, ethyl acetate or ethanol) or their mixtures with water), specifically using chains (III) each having 1-100 (preferably 1-50) hydroxycarboxylic acid repeating units.

A96

IN TH HPA, A; WENT, I; FACHAL, I; PHAN, P; GUTENBERG, I; GUNSWORTH, P  
PA THUMA ND HUMAN GENOME SCI INC

PI WO 9932135 A1 19990701 (199935)\* EN 86p  
 RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL  
 OA PT SD SE SZ UG ZW  
 W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD  
 GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV  
 MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT  
 UA UG US UZ VN YU ZW  
 AU 9919057 A 19990712 (199950)  
 EP 1041996 A1 20001011 (200052) EN  
 R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE  
 CN 1283997 A 20010314 (200130)  
 US 6238888 B1 20010529 (200132)  
 KR 2001033484 A 20010425 (200164)  
 MX 20000006154 A1 20010301 (200170)  
 JP 2001526239 W 20011218 (200203) 91p  
 US 2002016295 A1 20020207 (200213)  
 NZ 505324 A 20021122 (200301)  
 ADT WO 9932135 A1 WO 1998-US26085 19981222; AU 9919057 A AU 1999-19057  
 19981222; EP 1041996 A1 EP 1998-963812 19981222, WO 1998-US26085 19981222;  
 CN 1283997 A CN 1998-813339 19981222; US 6238888 B1 Provisional US  
 1997-68493P 19971222, US 1998-218444 19981222; KR 2001033484 A KR  
 2000-706985 20000622; MX 20000006154 A1 MX 2000-6154 20000621; JP  
 2001526239 W WO 1998-US26085 19981222, JP 2000-525126 19981222; US  
 2002016295 A1 Provisional US 1997-68493P 19971222, Cont of US 1998-218444  
 19981222, US 2001-853666 20010514; NZ 505324 A NZ 1998-505324 19981222, WO  
 1998-US26085 19981222  
 FDT AU 9919057 A Based on WO 9932135; EP 1041996 A1 Based on WO 9932135; JP  
 2001526239 W Based on WO 9932135; US 2002016295 A1 Cont of US 6238888; NZ  
 505324 A Div in NZ 521590, Based on WO 9932135  
 PRAI US 1997-68493P 19971222; US 1998-218444 19981222; US 2001-853666  
 20010514

AB WO 9932135 A UPAB: 20011203  
 NOVELTY - Compositions containing keratinocyte growth factor-2 prepared as  
 ligand, lyophilized or gel formulations, used for treating e.g. wound,  
 psoriasis, inflammatory bowel disease, ulcers or diabetes are new.

DETAILED DESCRIPTION - (A) A novel pharmaceutical composition  
 comprises:

- (1) 0.02 to 40 mg/ml of a keratinocyte growth factor-2 (KGF-2)  
 polypeptide;
- (2) a buffer of pH 5.0 to 8.0 at a concentration of 5-50 mM; and
- (3) a diluent to bring the composition to a designated volume; or a  
 reaction product of these.

INDEPENDENT CLAIMS are also included for the following:

- (1) a pharmaceutical composition comprising:
  - (a) as in (A)-(A3); and
  - (b) (b) a bulking agent; or a reaction product of these;
- (2) a pharmaceutical composition comprising:
  - (i) a 0.02 to 40 mg/ml of KGF-2 polypeptide;
  - (ii) 5-20 mM of citric acid or a salt;
  - (iii) 0.01-125 mM of NaCl;

EXAMPLES:

- (a) a typically effective amount of a KGF-2 polypeptide;
- (b) 10-500 mM sodium citrate buffer;

- (c) 0.01-150 mM NaCl;
- (d) 1 mM EDTA;
- (e) 0.01-7% sucrose;
- (f) 0.75-1.5% (w/w) carboxymethyl cellulose or 0.5-1.5% hydroxypropyl methyl cellulose or 0.25-0.75% hydroxyethyl cellulose or 0-1% carbomer or any combination;
- (4) a KGF-2 gel formulation of pH 6.2 comprising:
  - (a) as in (3a)-(3d);
  - (b) 0.1-7% sucrose;
  - (c) 4-18% Pluronic F127 (RTM);
- (5) a KGF-2 gel formulation comprising:
  - (a) 0.01 to 10 mg/ml of a KGF-2 polypeptide;
  - (b) 5 to 20 mM of sodium citrate;
  - (c) 10 to 25% (w/v) Pluronic 127 (RTM) or Poloxamer 407 (PTM) and water.

USE - The compositions can be used to stimulate epithelial cell proliferation and basal keratinocytes for the purpose of wound healing, and to stimulate hair follicle production and healing of dermal wounds. The compositions can also be used to stimulate differentiation of cells, e.g. muscle cells, cells which make up nervous tissue, prostate cells and lung cells. They can be used to stimulate wound healing of wounds including surgical wounds, excisional wounds, deep wounds involving damage of the dermis and epidermis, eye tissue wounds, dental tissue wounds, oral cavity wounds, diabetic ulcers, dermal ulcers, cubitus ulcers, arterial ulcers, venous stasis ulcers, and burns resulting from heat exposure to extreme temperatures of heat or cold, or exposure to chemicals, in normal individuals and those subject to conditions which induce abnormal wound healing such as uremia, malnutrition, vitamin deficiencies, obesity, infection, immunosuppression and complications associated with systemic treatment with steroids, radiation therapy, and antineoplastic drugs and antimetabolites. The compositions are also useful for promoting the healing of wounds associated with ischemia and ischemia and ischemic injury, e.g. chronic venous leg ulcers caused by an impairment of venous circulatory system return and/or insufficiency; for promoting dermal reestablishment subsequent to dermal loss, increasing the tensile strength of epidermis and epidermal thickness, and increasing the adherence of skin grafts to a wound bed and to stimulate re-epithelialization from the wound bed, to stimulate epithelial cell proliferation and basal keratinocytes for treating burns and skin defects such as psoriasis and epidermolysis bullosa, to increase the adherence of skin grafts to a wound bed and to stimulate re-epithelialization from the wound bed, to reduce the side effects of gut toxicity that result from radiation, chemotherapy treatments or viral infections, to treat diseases and conditions of the liver, lung, kidney, breast, pancreas, stomach, small intestine, and large intestine, to treat inflammatory bowel diseases, diabetes, thrombocytopenia, hypofibrinogenemia, hypoalbuminemia, hypoglobulinemia, hemorrhagic cystitis, xerostomia, keratoconjunctivitis sicca, to stimulate the epithelial cells of the salivary glands, lacrimal glands and stimulating re-epithelialization of the sinuses and the growth of nasal mucosa.

TECHNICAL FIELD

TECH

DATE: 19990901

TECHNICAL FIELD

compositions may also contain e.g. glycerol, methionine, ascorbic acid or monothioglycerol. The buffer may comprise e.g. phosphonic, acetic, aconitic, citric, glutaric, malic, succinic or carbonic acid, or an alkali or alkaline earth salt.

TECHNOLOGY FOCUS - POLYMERS - Preferred Composition: The compositions may contain a thickening agent, e.g. a water soluble etherified cellulose or a high molecular weight polymer of acrylic acid cross-linked with allylsucrose or an allyl ether of pentarythritol. The etherified cellulose may be e.g. methyl cellulose, hydroxyethyl cellulose, hydroxy propyl cellulose, hydroxy propyl methylcellulose or carboxymethyl cellulose. The compositions may comprise a gel forming agent, e.g. a high molecular weight polymer e.g. vinyl polymer (e.g. polyacrylic acid, polymethacrylic acid, polyvinyl pyrrolidone, polyvinyl alcohol and salts and esters), polyoxyethylene-polyoxypropylene copolymer, polysaccharide (e.g. a cellulose **derivative**, a **glycosaminoglycan** e.g. hyaluronic acid, chondroitin, chondroitin-4-sulfate, heparan sulfate, **heparin**, salts and esters,) **glycosaminoglycan** in combinations with collagen, gelatin or fibronectin; agar, pectin, alginic acid, dextran, alpha-amylase, amylopectin, **chitosan**, and salts and esters, protein, poly(ethylene oxide), acrylamide polymer (e.g. a polyacrylamide or a polymethacrylamide) or a salt.

L20 ANSWER 19 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 1999-226198 [19] WPIDS

DNC C1999-066532

TI New **amphipathic chitosan derivative** - is prepared by introducing sugar to phosphatidyl group.

DC A96 B04 D21

PA (NOEV-N) NOEVIR KK

CYC 1

PI JP 11060606 A 19990302 (199919)\* 11p

ADT JP 11060606 A JP 1997-227406 19970807

PFAI JP 1997-227406 19970807

AB JP 11060606 A UPAB: 19990518

An **amphipathic chitosan derivative** of formula (I) is new: R1, R2 = H or at least 1C alkyl or alkenyl; and X = reducing sugar or a reducing sugar containing a lysophosphatidyl group; with the proviso that R1 and R2 are not H at the same time.

ADVANTAGE - The new **amphipathic chitosan derivatives** can be used as a dispersion stabilizer and an emulsifier in an external skin agent and is safe and can be expected for antibacterial activity and moisture retention.  
Dwg.0/0

L20 ANSWER 20 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 1999-226197 [19] WPIDS

DNC C1999-066531

TI New **amphipathic chitosan derivatives** - and external skin agents containing at least one **amphipathic**

ADT JP 11060606 A JP 1997-227406 19970807

PFAI JP 1997-227406 19970807

AB JP 11060606 A UPAB: 19990518

An **amphipathic chitosan derivative** of formula (I) prepared by introducing at least one reducing sugar via a hydrophobic group and at least one reducing sugar to the amino group of **chitosan** or a partly **deacetylated chitin**, is new:

ADVANTAGE - The new **amphipathic chitosan derivatives** can be used as a dispersion stabilizer and an emulsifier in an external skin agent and is safe and can be expected for antibacterial activity and moisture retention.  
Dwg.0/0

L20 ANSWER 21 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 1998-433668 [37] WPIDS

DNC C1998-131045

TI Preparation of **amphipathic chitosan derivative**  
- is useful in external skin medicine.

DC B04 D21

PA (NOEV-N) NOEVIR KK

CYC 1

PI JP 10182332 A 19980707 (199837)\* 11p

ADT JP 10182332 A JP 1996-354854 19961220

PRAI JP 1996-354854 19961220

AB JP 10182332 A UPAB: 19980916

Preparation of an **amphipathic chitosan derivative** (I) comprises introducing an N-acylamino-saccharide of formula (II) to the amine group: (II) RCO-NH-X-NH)n-Y  
R = 2-22C alkyl or alkenyl; X = saccharide; Y = **chitosan** or partly **deacetylated chitin**; and n at least 1.

ADVANTAGE - The new **amphipathic chitosan derivative** is safe and excellent in antibacterial and moisture retaining ability.  
Dwg.0/0

L20 ANSWER 22 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 1998-328479 [29] WPIDS

DNN N1998-257117 DNC C1998-101244

TI New synthetic amino sugar derivative used for **medical** and cosmetic materials - comprises other sugar joined to amino group of part of amino sugar of polysaccharide and/or oligo sugar containing amino sugar.

DC B04 D21 P34

PA (NETE-H) NETERKU KK; (YAES-N) YAESU SUISAN KAGAKU KOGYO KK

CYC 1

PI JP 10120705 A 19980512 (199829)\* 8p

ADT JP 10120705 A JP 1996-272604 19961015

PRAI JP 1996-272604 19961015

AB JP 10120705 A UPAB: 19980722

Synthetic amino **sugar** derivative comprises at least 1 other **sugar** joined to an amino group of at least part of an amino sugar of polysaccharide and/or oligo sugar

polysaccharide, polysaccharide, chitin  
and the oligo **sugar** is **chitosan** or oligo **sugar**  
**sugar** formed by deacetylation of N acetyl group of **chitin** by the treatment with alkali. The other **sugar** is  
lactose, melibiose, lactose.

glucose, maltose, laminaribiose, cellobiose, mannobiose, digalactosamine and/or diglucosamine. Joining of the terminal group and the amino group is carried out by using a coupling agent containing at least 1 water soluble carbodiimide.

USE - The synthetic amino **sugar** derivative is useful for **medical** material or cosmetic material.

ADVANTAGE - Various characteristics such as biological activity or high solubility can be imparted to the synthetic amino **sugar** derivative by selecting the kind of other **sugar** to be introduced.

Dwg. 0/4

L20 ANSWER 23 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 1996-350153 [35] WPIDS

DNC C1996-110557

TI Bio activity promoter for improving **health** - comprises material having high level of nucleic acid and chitosan.

DC B04

PA (NISH-N) NIPPON SHOKUSEI KK

CYC 1

PI JP 08165246 A 19960625 (199635)\* 3p

ADT JP 08165246 A JP 1994-331687 19941210

PRAI JP 1994-331687 19941210

AB JP 08165246 A UPAB: 19960905

Bioactivity promoter comprises material having a high level of nucleic acid and chitosan.

Also claimed are capsules comprising the bioactivity promoter sealed in water soluble capsules.

At least one of anhydrous **lactose**, corn starch, phosphoric acid gp., and cane **sugar** gp. is pref. contained in a form of tablets. Chitosan is dissolved and form a jelly when incorporated into a body, and absorbs cholesterol. The material having a high level of nucleic acid are e.g. lump of spermatozoon of salmon or swellfish, dried sea slug or beer yeast. The chitosan is alkali treated chitin contained in crab or shrimps.

USE/ADVANTAGE - The bioactivity promoter improves **health**. The absorption of cholesterol in the intestine is efficiently prevented. Arteriosclerosis is prevented.

In an example, powdery spermatozoon of salmon (120.0 mg/tablet), purified nucleic acid powder **derived** from beer yeast (27.0), **chitosan** powder (40.05), anhydrous, lactic acid (60.0), corn starch (36.45), tribasic calcium phosphate (7.5) and cane **sugar** fatty acid ester (9.0) were mixed to give bioactivity promoter (300.0 mg/tablet), which was sealed in water soluble capsule to give bioactivity promoter capsule.

Dwg. 0/0

L20 ANSWER 24 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 1995-037965 [06] WPIDS

DNN N1995-030027 DNC C1995-017031

A96 D22

IN SHAFER, J; LEMANN, J

PA (CIBA) CIBA GEIGY AG; (NOVA) NOVARTIS AG; (CIBA) CIBA GEIGY CORP

|       |  |                    |                |                    |                |                |  |
|-------|--|--------------------|----------------|--------------------|----------------|----------------|--|
| PI    | EP 632329  | A1                 | 19950104       | (199506)*          | DE             | 44p            |  |
|       | R: AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE |                    |                |                    |                |                |  |
|       | NO 9402495   | A                  | 19950103       | (199510)           |                |                |  |
|       | CZ 9401610   | A3                 | 19950118       | (199511)           |                |                |  |
|       | FI 9403129   | A                  | 19950103       | (199513)           |                |                |  |
|       | CA 2127200   | A                  | 19950103       | (199514)           |                |                |  |
|       | AU 9466039   | A                  | 19950223       | (199515)           |                |                |  |
|       | ZA 9404758   | A                  | 19950329       | (199519)           |                | 8p             |  |
|       | JP 07089925  | A                  | 19950404       | (199522)           |                | 35p            |  |
|       | HU 69305   | T                  | 19950928       | (199545)           |                |                |  |
|       | NZ 260892  | A                  | 19960227       | (199614)           |                |                |  |
|       | US 5527925   | A                  | 19960618       | (199630)           |                | 18p            |  |
|       | US 5612389   | A                  | 19970318       | (199717)           |                | 19p            |  |
|       | US 5612391   | A                  | 19970318       | (199717)           |                | 19p            |  |
|       | US 5621018   | A                  | 19970415       | (199721)           |                | 19p            |  |
|       | CN 1102825   | A                  | 19950524       | (199726)           |                |                |  |
|       | AU 683256  | B                  | 19971106       | (199802)           |                |                |  |
|       | EP 632329  | B1                 | 19971203       | (199802)           | DE             | 51p            |  |
|       | R: AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE |                    |                |                    |                |                |  |
|       | DE 59404708  | G                  | 19980115       | (199808)           |                |                |  |
|       | NO 302026  | B1                 | 19980112       | (199809)           |                |                |  |
|       | ES 2109647   | T3                 | 19980116       | (199810)           |                |                |  |
|       | TW 328535  | A                  | 19980321       | (199833)           |                |                |  |
|       | IL 110171  | A                  | 19990411       | (199929)           |                |                |  |
|       | MX 191239  | B                  | 19990215       | (200055)           |                |                |  |
|       | HU 219502  | B                  | 20010428       | (200131)           |                |                |  |
| ADT   | EP 632329 A1                                       | EP 1994-810780     | 19940624;      | NO 9402495 A       | NO 1994-2495   | 19940701;      |  |
|       | CZ 9401610 A3                                      | CZ 1994-1610       | 19940701;      | FI 9403129 A       | FI 1994-3129   | 19940629;      |  |
|       | CA 2127200 A                                       | CA 1994-2127200    | 19940630;      | AU 9466039 A       | AU 1994-66039  |                |  |
|       | 19940628;  | ZA 9404758 A       | ZA 1994-4758   | 19940701;          | JP 07089925 A  | JP 1994-151087 |  |
|       | 19940701;  | HU 69305 T         | HU 1994-2005   | 19940701;          | NZ 260892 A    | NZ 1994-260892 |  |
|       | 19940630;  | US 5527925 A       | US 1994-265597 | 19940624;          | US 5612389 A   | Div ex US      |  |
|       | 1994-265597  | 19940624,          | US 1995-465993 | 19950606;          | US 5612391 A   | Div ex US      |  |
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|       | 1994-265597  | 19940624,          | US 1995-469410 | 19950606;          | CN 1102825 A   | CN 1994-108127 |  |
|       | 19940701;  | AU 683256 B        | AU 1994-66039  | 19940628;          | EP 632329 B1   | EP 1994-810380 |  |
|       | 19940624;  | DE 59404708 G      | DE 1994-504708 | 19940624,          | EP 1994-810380 | 19940624;      |  |
|       | NO 302026 B1                                       | NO 1994-2495       | 19940701;      | ES 2109647 T3      | EP 1994-810380 | 19940624;      |  |
|       | TW 328535 A  | TW 1994-101182     | 19940617;      | IL 110171 A        | IL 1994-110171 | 19940630;      |  |
|       | MX 191239 B  | MX 1994-4974       | 19940630;      | HU 219502 B        | HU 1994-2005   | 19940701       |  |
| EFT   | US 5527925 A                                       | Div ex US 5527925; | US 5612391 A   | Div ex US 5527925; | US 5621018     |                |  |
|       | A Div ex US 5527925;                               | AU 683256 B        | Previous Publ. | AU 9466039;        | DE 59404708 G  |                |  |
|       | Based on EP 632329;                                | NO 302026 B1       | Previous Publ. | NO 9402495;        | ES 2109647 T3  |                |  |
|       | Based on EP 632329;                                | HU 219502 B        | Previous Publ. | HU 69305           |                |                |  |
| PREAI | CH 1993-1006                                       | 19930702           |                |                    |                |                |  |
| AB    | EP 632329 A  | UPAB: 19970612     |                |                    |                |                |  |

New acetophenone derivs. (IA) and (IB), in which OH gps. are functionalised with organic diisocyanates are of formula (I):

OCN-T1-NH-C(O)-Y-ER-(Y2)n-T2 (I); In (IA): T1 = R4; T2 = -Ph-C(O)-2-(Y1)n-R2; In (IB): T1 = R5; T2 = -C(O)-Ph. n = 1, 2.

[illegible]

cycloalkylene)-CyH<sub>2</sub>y- R<sub>5</sub> = R<sub>4</sub> or linear 3-18C alkylene; R<sub>6</sub> = 1-6C alkyl; x = 3, 4 or 5; y = 1-6; R<sub>a</sub>, R<sub>b</sub> = H, 1-8C alkyl, 3-8C cycloalkyl, benzyl, or phenyl; n = 0 if R<sub>2</sub> = H; in (IA), at most two Y<sub>1</sub> = O, in the -(Y<sub>1</sub>)<sub>n</sub> gps. and n = 0 in the other -(Y<sub>1</sub>)<sub>n</sub> gps. in (IB), at most one Y<sub>1</sub> = O in the -(Y<sub>1</sub>)<sub>n</sub> gps. and n = 0 in the other -(Y<sub>1</sub>)<sub>n</sub> gps. n = 0 in the -(Y<sub>2</sub>)<sub>n</sub> gps. if R<sub>3</sub> = a direct bond.

Also claimed are: (a) oligomers/polymers (III) with gps. of the formula: -C(O)NH-T<sub>1</sub>-Y-R<sub>3</sub>-(Y<sub>2</sub>)<sub>n</sub>-T<sub>2</sub> replacing H in OH or NH gps. attached to the chain, opt. by bringing gps. or in -NH- gps. in the chain; and (b) new (meth)acrylyl cpds. of formula (IV): R<sub>30</sub>-C(O)NH-T<sub>1</sub>-NHC(O)-Y-R<sub>3</sub>-(Y<sub>2</sub>)<sub>n</sub>-T<sub>2</sub> (IV); R<sub>30</sub> = CH<sub>2</sub>=CR<sub>31</sub>-C(O)-X<sub>5</sub>-R<sub>32</sub>-X<sub>6</sub>-; R<sub>31</sub> = H or Me; R<sub>32</sub> = 2-12C alkylene; X<sub>5</sub>, X<sub>6</sub> = -O- or -NH-.

USE - (I), (III), and (IV) are used as initiator in radiation-sensitive compsns. (V) contg. ethylenically unsatd. photopolymerisable or photocurable cpd(s). (VI); and in a process for surface modification of an inorg. or organic substrate with H-active HO, HS, HN-(1-6C alkyl) or NH<sub>2</sub> gps. (claimed).

The surface-modified materials pref. transparent organic ophthalmic mouldings, esp. contact lenses in which (I) is firmly bound to the surface by O or S atoms, or N-(1-6C alkyl) or -NH gps. as photoinitiator; polymers (VII) obtd. by photopolymerisation or photocure of (V); and ophthalmic mouldings, esp. contact lenses made from (VII) are claimed per se. The modified materials are also useful for e.g. artificial blood vessels, prostheses, surgery or diagnostics, since they allow overgrowth of endothelium cells.

ADVANTAGE - (I) are derived from (hydroxy)alkylphenones, which are excellent photoinitiators but often cause discolouration and the formation of toxic low mol. fragments. (I) can be prepd. easily in high purity, have high reactivity and storage stability and are highly effective photoinitiators. They are suitable for biocompatible materials, esp. those used in the biomedical field.

The modified materials esp. contact lenses, are highly wettable (small angle of contact), have high tensile strength and abrasion resistance, are not (significantly) attacked by enzymes, do not cause sepn. of components from tears, have no affinity for cosmetics, volatile chemicals or dust and do not support microorganisms.  
Dwg. 0/0

L20 ANSWER 25 OF 24 WPIDS (C) 2003 THOMSON DERWENT

AN 1993-117237 [14] WPIDS

DNN N1993-089377 DNC C1993-052044

TI Water soluble biologically active polymer conjugate used for binding glycosaminoglycan(s), e.g., **heparin** to surfaces to provide anti-clotting properties.

DC **A96 B04 D22 P34**

IN FORMGREN, B; LARSSON, R; UHLIN, A; WESTBERG, D

PA (CORL-N) CORLINE SYSTEMS AB

CYC 14

PI W 9305793 A1 19930401 (199314)\* 31p

FW: AT BE CH DE DK ES FR GB GR IE IT JP MC NL NW

FI 19930401 (199314)\* 31p

R: DE FR GB IT

EP 658112 B1 20010711 (200140) EN

R: DE FR GB IT

DE 69231935 E 20010816 (200154)

JP 3398150 B2 20030421 (200328) 12p

ALT WO 9305793 A1 WO 1992-SE672 19920925; AU 9226646 A AU 1992-26646 19920925, WO 1992-SE672 19920925; SE 9102798 A SE 1991-2798 19910926; SE 470006 B SE 1991-2798 19910926; JP 06510783 W WO 1992-SE672 19920925, JP 1993-505995 19920925; EP 658112 A1 EP 1992-920440 19920925, WO 1992-SE672 19920925; US 5529986 A WO 1992-SE672 19920925, US 1994-011224 19940525; EP 658112 B1 EP 1992-920440 19920925, WO 1992-SE672 19920925; DE 69231935 E DE 1992-631935 19920925, EP 1992-920440 19920925, WO 1992-SE672 19920925; JP 3398150 B2 WO 1992-SE672 19920925, JP 1993-505995 19920925

FDT AU 9226646 A Based on WO 9305793; JP 06510783 W Based on WO 9305793; EP 658112 A1 Based on WO 9305793; US 5529986 A Based on WO 9305793; EP 658112 B1 Based on WO 9305793; DE 69231935 E Based on EP 658112, Based on WO 9305793; JP 3398150 B2 Previous Publ. JP 06510783, Based on WO 9305793

PRAI SE 1991-2798 19910926

AB WO 9305793 A UFAB: 19940120

Water soluble biologically active conjugate (BAC), comprises straight-chained organic polymer having a number of functional gps. distributed along the polymer backbone chain, via which gps. at least 20 sulphated **glycosaminoglycans** (GAG) are anchored through covalent bonds in a non-active part of the GAG. Also claimed is prepd. substrate surface comprising a BAC affinity-bound to the surface preferably by electrostatic interaction.

Pref. the polymr is **derived** from natural or synthetic polypeptide, polysaccharide or aliphatic polymer. Specific examples given are polysine, polyornithine, **chitosan**, polyimine, or polyallylamine.

USE/ADVANTAGE - The BAC provides more efficient utilisation of the GAG than the individual substance, is easier to prepare in pure form than proteoglycans, and the compsn. can be varied in controllable way as required. The BAC is used for binding to surface to provide that surface with the desired biological activity. In the case of the GAG **heparin**, this provides anti-clotting activity for extra-corporeal circulation equipment. The surface modification process is simple and can be carried out reproducibly. Application can be to polymeric materials, metals, ceramics, or endogenous tissue. Disadvantages of prior art heparinisation processes e.g. retention of toxic reagents or degradation of **heparin** in processing, are avoided. Other GAG, in addn. to **heparin**, which can be applied include heparan, dermatan, or chondroitin sulphates, or their fragments.

Dwg. 0/1

L20 ANSWER 26 OF 26 WPIDS (C) 2003 THOMSON DERWENT

AN 1987-061172 [09] WPIDS

DNC C1987-025632

TI Sustained release drug compsn. using chitin deriv. comprises carboxylalkylated deriv. of chitin, hydrophilic high mol. wt. cpd. and medical applications

ALT WO 9305793 A B1 19930421 19930421; AU 9226646 A B1 19930421 19930421

AB JP 62016413 A UPAB: 19930922

Compsn. comprises a carboxyalkylated **deriv.** of a **chitin**, a hydrophilic high mol. wt. cpd. and a **medical** substance.

USE/ADVANTAGE - The compsn. can decrease the dose frequency of the drug.

In an example, 75 pts.wt. of carboxymethyl chitin (I), 12.0 pts.wt. of hydroxypropyl cellulose, 12.5 pts.wt. of indomethacin (II) and 0.5 pts.wt. of Mg stearate (III) are mixed together uniformly to prepare the compsn. and tabletised to 200mg tablet, and dissolution test is made by JP 2nd method using 1st soln. of pH 1.2. A control tablet (1) comprises 43.5 pts.wt. microcrystalline cellulose, 43.5 pts.wt. **lactose**, 12.5 pts.wt. (II) and 0.5 pts.wt. (III). A control tablet (2) comprises 87.0 pts.wt. (I), 12.5 pts.wt. (II) and 0.5 pts.wt. (III).  
0/0